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TUBERCULOSIS OF FASCIA.*

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Very few writers mention connective tissue as a primary seat of tuberculosis. Senn, in his "Principles of Surgery," gives the only article of importance upon this subject that I have been able to find, and that is a very brief one. We are learning, however, that the fasciæ of various parts of the body are not infrequently the primary seat of disease. Every surgeon is familiar with tuberculosis of fascia secondary to gland, bone and joint disease, but in these cases the communicating sinuses can be found and the relation between the disease of the fascia and the gland, bone or joint easily established. I have the history of quite a number of cases in which there was no disease of gland, bone or joint and in which there was extensive disease of the fascia. There are two varieties. In the first variety the disease is confined to the surface of the fascia and is practically the same as a tuberculosis of the tissue secondary to a joint tuberculosis. There may be a very small area affected, or it may be quite extensive. There is a layer of tubercular granulation tissue which can be readily scraped off, leaving the protection wall of inflammatory deposit which nature always throws around a tubercular abscess. It is found most frequently in the fascia lata, in the fascia covering the popliteal space and in the deeper fascia of the thigh and leg. In the second variety the disease is not limited to the surface of the fascia, but dips down through it, attacking deeper layers of the fascia and muscular tissue. It is found most frequently in the chest-walls and in the deeper layers of the thigh.

The symptoms of fascial tuberculosis are a slowly developing swelling accompanied by little or no pain, and a local rise of temperature which can be detected by a sensitive hand. The general temperature rarely rises above 99 F. There is no change in color until the disease approaches the surface, when the skin will become red at first and later purple in spots. These purple spots finally give way and sinuses are formed. After the sinuses are formed a secondary pyogenic infection takes place, and the patient begins to suffer pain. There is a marked difference in the effect upon the general health in different cases. In some, the health may be little affected for a long time, or until sinuses form and the mixed infection takes place, after which there is liable to be a rapid decline in health. In others, mixed infection will occur before sinuses form, and the patient will have a high temperature and other symptoms of a phlegmon.

The diagnosis is to be made largely by exclusion. At times it will be impossible to make a positive diagnosis without an exploratory incision. An experienced surgeon will usually be able to detect a joint tuberculosis, but he may not be able to differentiate a fascial tuberculosis from one beginning in some other tissue. The evidences of a joint tuberculosis are usually easily detected, but a bone tuberculosis independent of a joint lesion may be very obscure indeed. While we should always remember that fascial tuberculosis may be primary we should not forget that in the vast majority of cases it is secondary. I have seen one case in which the patient came to the surgeon for relief from a tuberculosis of the fascia just below the crest of the ilium, which was found to be connected through a sinus thirty inches long with a primary disease of the tibia. Most careful search should always be made for foci in neighboring lymphatic glands, bones and joints before accepting a diagnosis of fascial tuberculosis.

When the patient first comes to the surgeon with open sinuses the tubercular nature of the disease is readily established by their characteristic appearance. When he comes with a mixed infection and without a sinus the surgeon will surely make a diagnosis of phlegmon as in my case (No. 6), unless he is very careful to get a full case history. Cases in which phlegmon is said to have been followed by a tubercular infection were probably originally tubercular, the pyogenic infection being secondary.

The prognosis varies with the variety, the location, and the extent of the disease. Under proper treatment that variety which is confined to the superficial fascia will usually disappear promptly, but in the other variety in which the disease dips down into the deeper parts, the prognosis is grave. When situated in the deeper layers of the thigh the prognosis is very grave indeed.

The treatment consists of thoroughly removing every trace of disease with knife, curette and scissors. In the milder variety a free incision should be made and the diseased tissue scraped away, exercising extreme care that every nook and corner is reached. The cavity should then be wiped dry or irrigated with sterile water and closed without drainage. When pyogenic infection is present, with or without sinuses, gauze drainage should be employed. Rubber drainage-tubes should be avoided in tuberculosis, because their track is almost certain to become tubercular.

In the severe or perforating variety it is necessary to be more thorough, and at times heroic, in the treatment, for half-way operating is worse than useless. Even after the most painstaking and careful operation there is a very great tendency for this variety to relapse. When relapse does occur, another operation should be performed as soon as the disease is recognized, because the tendency is to grow progressively worse, and the danger of a general tubercular infection is imminent. It has been my good fortune to save some of these patients by repeated operations. When this disease is located in the chest-wall the patient usually comes to the surgeon with sinuses, mixed infection and a diagnosis of disease of

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the ribs. I have learned from very trying experience that the treatment of these cases must be decidedly heroic, not because of a special tendency to lung involvement, as might be inferred from the location, but because the disease often dips down between the ribs, and unless very thorough work is done it will not all be removed. Each individual sinus must be laid open from end to end, regardless of the number or size of scars to be left. It will not do to follow the sinus along under or between the pectoral muscle until it dips down between the ribs and then curette the remaining portion, but it must be laid open for inspection to the uttermost part. The rule is that after dipping down between the ribs a sinus will extend for a considerable distance between the ribs, and unless it is followed by the eye, it will not be found, and the operation will be a failure. Sometimes an abscess cavity will be found so situated that it is necessary to remove a section of the rib in order to properly clean and drain it. I have found the actual cautery very efficient when thoroughly applied after scraping. Comparatively little closing up can be done after these operations. The wounds must be firmly packed with iodoform gauze so that they are cone-shaped with the apex at the bottom. They must be watched and overhauled whenever tubercular granulations appear. Most of my relapses in these cases have occurred when the after-treatment had been carried out by the family physician, but I am bound to admit that some have recurred while under my own care.

When this disease occurs in the extremities the treatment must be carried out along the lines just suggested. It may be necessary at times to remove diseased layers of fascia and whole muscles, and when persistent relapses occur and the patient's health is failing, amputation may become our only resource.

When situated in the deeper layers of the thigh this disease is apt to become very extensive and is particularly difficult to treat successfully, and when the upper third of the thigh is involved, we are deprived of amputation as a last resource. Early and oft-repeated operations offer our only hope in these cases. An added danger in this location is that the disease may become very extensive before a diagnosis can be made, on account of its distance from the surface.

The following are brief histories of cases selected to illustrate the different phases of the disease as well as the trials, difficulties and varying success in its treatment:

CASE 1.—J. F. J., aged 48 years, a deputy-sheriff, came from Madison, Minn., in May, 1895, to see me on account of an enlargement of the thigh. The whole thigh seemed swollen and at its lower end the swelling came to an abrupt ending around the upper margin of the patella so that that bone seemed to be at the bottom of a deep depression. The swelling had been coming on slowly for nearly two years. There had been but little pain or disturbance of general health until toward the last, when his strength began to fail somewhat and he had some pain from pressure. It was quite symmetrical and gave an indistinct sense of fluctuation. There was local heat but little tenderness; temperature 99. The neighboring joints were healthy and the patient could walk with the aid of a cane.

Diagnosis.—Cold abscess probably due to tuberculosis of some portion of the shaft of femur.

I made an incision nearly the whole length of the thigh, evacuating a large quantity of the characteristic contents of the so-called tubercular abscess. No sinus leading to the bone could be found after scraping away the lining of the abscess cavity, and a diagnosis of tuberculosis of the fascia lata was made. The cavity was thoroughly irrigated with a 1 to 2000 corrosive sublimate solution, and, with the exception of a small opening at the lower end, through which passed a small strip of iodoform gauze, the wound was closed with a continuous silk suture. There was quite free drainage at first, but it soon ceased, and on the fifth day the drain was removed, after which the patient made a speedy recovery, returning to his home on June 14, just two weeks after the operation. He has been in excellent health ever since and has had no return of his local trouble.

This case is a typical example of the simple variety of tuberculosis of fascia.

CASE 2.—On Feb. 13, 1893, I was called by Dr. Rogers to operate upon Mrs. S., who had been suffering from what was supposed to be tuberculosis of the ribs. There were sinuses over the front of the chest, below the right breast and at the outer margin of the right scapula. All the sinuses in front were laid open, curetted and packed. The right breast was turned up in a flap, the sinuses dissected out, the breast replaced and the wound partially closed. Extensive dissection was neccesary to expose the whole of the disease in the back, but we were fortunate in reaching all of it, for the patient made an exceptionally speedy recovery.

I fully expected to find disease of the ribs in this case but none was found, the whole trouble being confined to the fascia.

CASE 3.—H. N., aged 24 years, came under my care on May 28, 1897, with a number of sinuses over the anterior thoracic wall, which were due to tuberculosis of the fascia. He had been operated upon once before, but without success. I laid all the sinuses open down to a point where some of them dipped down through the fascia and seemed to end in blind pockets. These pockets were curetted and packed. Prompt recovery occurred, so that he returned to his home in the country in three weeks with the wounds so nearly healed that I thought they would heal under a few dressings by the family physician. He returned on July 9 with the sinuses almost as bad as before. At this, my second operation, the deep sinuses were followed down through the fascia into the spaces between the ribs and thoroughly curetted and cauterized with the Paquelin cautery. He returned to his home August 4, with the wounds completely healed, and has suffered no relapse since.

This is a typic case of the perforating variety, and illustrates the practical point made in the paper that success can only be gained by laying every sinus open for inspection throughout its whole length.

CASE 4.—F. F., aged 48 years, a Mexican coffee-planter, came to me in January, 1896, suffering from a hydrops articuli of the right knee. The disease, although chronic, was quite mild in character and yielded promptly to treatment, which consisted of tapping, followed by irrigation with a bichlorid solution and rest in a plaster cast. Twenty months later, in September, 1897, he returned with a beginning tuberculosis of the fascia of the lower third of the left thigh. There were two sinuses and the disease seemed to be superficial. The part was laid open, freely scraped, and packed with gauze.

On Jan. 16, 1898, at St. Barnabas Hospital, I operated a second time removing all the diseased tissue I could find. On January 29 I realized that the last operation was a failure, and determined to operate again and to be as radical as possible. There were at

this time several sinuses and a mixed infection, and the patient was rapidly failing. I made an incision from just above the knee-joint to the tip of the greater trochanter. At the lower third of the thigh a strip of integument two inches wide and eight inches long, which was perforated by the sinus, was removed. A large portion of the fascia lata was removed, because it was diseased beyond all hope of recovery. The disease was found dipping down into the vastus externus muscle to such an extent that it was necessary to remove the whole of that muscle. It should be noted that this disease was in the left thigh, while his hyprops articuli had been on the right side. The left knee was healthy, but its synovial membrane was being attacked from the outside, and in my efforts to remove all the diseased tissue, I opened into the upper pouch of the knee. A piece of synovial membrane two inches long and one inch wide was removed, and the opening into the joint immediately closed with a running catgut suture, and although the patient was suffering from a mixed infection at the time of the operation, no joint symptoms followed. This enormous wound was closed, and, with the exception of a small spot at the lower end, where there was a small slough of the integument, it healed by first intention. The slough soon separated, and the wound granulated over without a return of tuberculosis. The patient left the hospital in less than three weeks, and very soon afterward returned to his Mexican home. Before he left he walked into my office with a cane, and the function of the limb was remarkably good, considering the amount of tissue removed. In May, 1899, I received a report that his leg is giving him no trouble, but that his general health is failing and that he has a cough.

Case 5.—John M., a blacksmith, 24 years of age, came under my care in April, 1897, for an extensive tuberculosis of the fascia of the left leg and popliteal space and a cold abscess between the ribs on the right side. An extensive dissection of the popliteal space was made and every visible trace of diseased tissue removed. The abscess in the side was opened, scraped, and packed.

One month after the first operation it was evident that the disease was returning, and a second scraping was done. Although the wounds did not heal rapidly, the patient improved rapidly in general health for a time. On July 3, he began to suffer from an acute synovitis of the left knee, which was non-suppurative and recovered in about two weeks. At this time the leg and popliteal space were healthy, but there was beginning disease on the outer side of the lower third of the thigh of the same limb, which was opened and scraped. Shortly after this his limb seemed to be perfectly well, and although his side was not entirely healed, it looked healthy, and his general health was excellent. He then went to his home in the country, where he remained until April, 1898, when he returned with extensive disease of the outer side of the thigh at the site of the old disease and with his side much worse. He re-entered St. Barnabas Hospital, where I removed every trace of disease from the thigh and removed a section of one rib in order to thoroughly clean out the abscess in his side. At this time I could find no trace of bone or joint disease. The portion of rib removed was perfectly healthy. Soon after this he returned to his home in good general health, but with open sinuses in the thigh and side. I did not see him from June, 1898, until the spring of 1899, when he returned to the city with a relapse of the disease in the lower third of the thigh and in the side. The site of the original disease in the leg and popliteal space remained healthy.

At this time I advised amputation of the thigh above the disease and a very heroic operation upon the side. He entered St. Mary's Hospital, where he was under the care of my colleague, Dr. Dunn, who amputated the leg and cleaned out the side. May 26, 1899, Dr. Dunn reports to me that the thigh is entirely healed and seems to be well; that his general health is good, but that his side is still unhealed. The specimen was taken to the University laboratory, where it was thoroughly examined, and, in addition to the extensive fascia tuberculosis, a beginning tuberculosis of the knee-joint was found. The joint disease was clearly secondary to the disease of the fascia.

Case 6.—On Dec. 24, 1897, I was called to see Wm. E., aged 20 years, who had come in from the country with an acute inflammation of the right leg. He gave a history of a traumatism, and I made a diagnosis of a phlegmon. The history given excluded osteomyelitis. He entered St. Barnabas Hospital, where I operated upon him on Christmas day. A large abscess was opened and drained in the usual manner, after which his high temperature disappeared and he improved very rapidly. He left the hospital in a few days feeling quite well, but with an open wound. Shortly after this his wound showed unmistakable evidences of tuberculosis. Upon careful inquiry I learned that one year before I saw him he had had trouble with this leg, which had kept him from work for some time, but which had recovered without an abscess forming. His leg had never been well after this, but had not kept him from work until a few days before I saw him. He re-entered the hospital, and I opened up the leg freely and found quite an extensive tuberculosis of the fascia, but no disease of bone. The diseased tissue was removed, and the wound packed with iodoform gauze. In three months the wound healed and he has had no trouble since. This was evidently a case of tuberculosis of the fascia which had been progressing slowly when a pyogenic infection occurred without the presence of a sinus. By exercising a little more care in securing the history I might have avoided an error in diagnosis.

KNEE-JOINT TUBERCULOSIS.

RESECTION FOR ITS CURE, WITH A PLEA FOR EARLIER OPERATION.*

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When we consider the anatomical changes as we find them in knee-joint tuberculosis, we at once must concede that there can be no one uniform method of treatment that will insure a favorable outcome in all cases.

We need only to recall the large and small primary bone-centers, not always occupying the same relations to the articular surfaces, progressing now slowly and again rapidly, usually forming small abscesses and at other times large ones; of the occurrence of mixed infection; of invasion of the periarticular structures, to show us that our management must be adapted to and changed from case to case. Especially is this true when we consider metastatic infections, systemic complications and resulting deformities. We would certainly be censurable if we adopted a uniform method for all cases, such as antituberculous remedies, either local or

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general; arthrotomy or arthrectomy, resection or possible amputation. It is true we are often perplexed as to the method best adapted to the case, because it is difficult, as a rule, to make a specific anatomical diagnosis, without opening the joint. Consequently, as practical surgeons, we classify our cases from a clinical standpoint, into mild or recent and severe or chronic.

No man can, in a given case, state positively whether the primary depot is located in the bone or in the synovial membrane, and since rest, immobilization, avoidance of irritation, and removal of superincumbent weight are the indications for the management of joint tuberculosis, whenever found, we employ these so-called conservative methods in recent and mild cases. And not until we find mechanical, local and general medicamental means of no avail do we pass on to the more radical operative measures. The advent of antiseptics with its operative furore, was the cause of frequent and early invasion of the knee-joint with suspected tuberculosis. The findings and results did not always justify the intervention; the function of the knee-joint was not restored as had been hoped, and now we have receded to a middle ground. The great praise bestowed on intra-articular injections of iodoform emulsion and other medicaments is possibly partly responsible for our present stand. We have also learned that the natural tendency for bone tuberculosis, under favorable conditions, is to recover. It is surprising how many cases do eventually recover with fairly useful joints that receive no other treatment than immobilization and the removal of the superincumbent weight.

To draw an exact line between the cases to be managed mechanically and those to be subjected to operation is not so simple, or to always decide when the time has come when purely mechanical means have accomplished what is possible and radical surgery is indicated is not easy. Reliable rules can not be laid down. Each case must be considered by itself, and general principles must be our guide.

In the presentation of this subject here I have nothing new to offer, but I rather desire to emphasize some things in connection with this question, and at the same time record my own experiences and impressions, and possibly contribute something toward the indications for resection of the knee-joint when affected by tuberculosis.

The cases of knee-joint tuberculosis coming under my care during the past ten years are 55 in number. The methods of treatment employed in these cases may be divided under the following heads:

1. Mechanical: Immobilization, with plaster-of-paris, starch bandage, and braces. 2. Intra-articular injections of iodoform emulsion, followed by compression. 3. Puncture with canula, copious irrigation with 2 per cent. carbolic, or 1000 sublimate solution, withdrawal of fluid, compression. 4. Free incision, irrigation, filling the joint with iodoform, closure by suture without drainage, immobilization. 5. Para-articular operations, opening of abscesses, excavation of bone centers. 6. Arthrectomy. 7. Resection. 8. Amputation. Tuberculin was not employed.

Of the entire number treated, 15 passed from observation before the final outcome could be noted. The remaining 40 were kept under control until the local process had come to an end. Of this number 7 came to resection of the joint surfaces and two to amputation. This leaves 31 cases that recovered without severe operative measures, and yielded partly to medicamental and partly to mechanical means, associated in a number of instances with joint puncture for evacuation of joint contents followed by injection or irrigation, simple incision, compression, ignipuncture, and local applications of various kinds.

It is my purpose to limit this dissertation to the consideration of the indications for, and the method of, resection employed and a brief reference to amputation, together with a short history of the cases so managed. Case 1 will be described in detail to illustrate the method of operation; the subsequent cases will be alluded to more briefly. It is my purpose to report the other cases at another time and place.

CASE 1.—MRS. A. O., aged 62 years, housewife, mother of several grown children, in her youth had suffered from pain, stiffness and swelling of the right knee, extending over a period of nearly two years. She recovered with a limited degree of motion. Since then she had enjoyed good health until a year previous to her admission, when her knee began to swell. It became sensitive and painful and she was unable to bear her weight on it.

When admitted to the hospital we found her appearing much older than her actual age, illy nourished and very pale. She was unable to bear her weight on her right leg.

On examination we found the knee swollen, of a glassy, almost pearly white appearance, painful on pressure, externally and internally. The joint was semiflexed; there was no fluctuation; thigh and calf were atrophied. There was no fever nor acceleration of pulse. On palpation a doughy, elastic sensation was imparted to the finger; no pitting. This condition was easily recognized to be tuberculosis. She having undergone much treatment without benefit, a resection was recommended and agreed to by the patient..

After the usual antiseptic preparation of the knee, and the application of an Esmarch rubber bandage to the middle portion of the thigh, an incision reaching the bone was made, beginning over the posterior border of the internal condyle, extending outward, transversely over the middle portion of the patella, thence to a point midway over the lower margin of the external condyle. The patella was divided transversely with a saw. On flexing the calf on the thigh by forcing the heel backward against the buttocks the entire articular surface was exposed. The joint cartilages were almost entirely destroyed, and had been replaced by a dense irregular growth of fibrous tissue, in the meshes of which was a mass of fungoid structures. A large half-dollar-sized bone cavity existed on the tibial articulation, another somewhat larger on the femoral side. The synovia had been replaced by a soft, pale, translucent, friable structure. The upper patellar fragment with its quadriceps tendon was pulled upward with a retractor, and the lower portion attached to the patellar tendon pulled downward; all restraining soft parts were clipped with a pair of scissors. A section one-third inch thick was removed from the tibia and femur, care being taken to make the plane of the sawed surfaces at a right angle with the long axis of the bones. All suspected soft structures, including the upper recess of the capsule, were cut away with a heavy pair of curved scissors. After a copious irrigation, the leg was extended and the vivified bone ends adjusted. The joint capsule was closed with catgut. The patellar fragments were adjusted and held together with a strong catgut, placed in the soft part at the outer and inner margin of the bone. The patellar periosteum was united by a running catgut suture. The integument was sutured with interrupted silk stitches. An antiseptic hygroscopic dressing

was applied and fastened with a roller, and the Esmarch tourniquet then removed. The extremity was placed on a Volkmann posterior tin split, the foot being kept elevated twenty-four hours. At the end of a week the dressing and sutures were removed. A small iodoform gauze pad was placed over the line of union, and the leg and thigh were placed in plaster of paris, which was worn for six weeks. The patient was allowed to sit up as soon as the plaster cast was hard. Weight was borne on the extremity during the seventh week. Bony union became firm, the final result being all that could be desired.

Case 2.—Miss D. A., aged 20 years, had always enjoyed good health until the age of 16 years, when she fell and bruised her right knee, which became swollen and had remained so. She had intervals of apparent improvement followed by relapses, always leaving the periarticular tissues more swollen than before. During the last eight months the pain has been continuous. The swelling presented a doughy feeling to the touch; fluctuation could be made out beneath and to each side of the patella. The overlying skin was pale. She had undergone almost continuous treatment, but in spite of immobilization, protection, removal of superincumbent weight, intra-articular injections of iodoform emulsion and ignipuncture, she became continually worse. Operative intervention was recommended and agreed to.

Under chloroform anesthesia and a through transverse incision the joint surfaces were exposed. The articular cartilage of both tibia and femur was perforated in many places; it was detached along the outer portion of the tibial articulation. The synovia was thickened, soft and translucent. The joint cavity contained a fluid in which caseous material was suspected.

A section of bone including the articular surfaces was removed from the tibia and femur, and all suspicious soft parts clipped away. The leg was extended, the wound closed, dressed, and at once placed in a plaster-of-paris cast, which was removed in six weeks. Wound healed *per primam*. Another cast was applied, and the patient allowed to walk on it, aided by crutches. Recovery was complete.

Case 3.—Mrs. C. E., aged 40 years, married, housewife, has always been well except for a stiffness of the right knee, which she has had since childhood, and which began after an injury, followed by swelling. She had had several attacks of pain, lasting from two weeks to six months, her present pain dating back one year. The condition of the knee was found to be semiflexion, swelling without discoloration, pain on pressure, inability to bear weight. There was indistinct fluctuation and much atrophy of calf and thigh. Immediate operation was recommended.

A transverse incision exposed a totally destroyed joint. The cartilage had almost entirely disappeared and was replaced by a thick fibrous mass, containing in it several hazel-nut-sized abscesses. The ends of the tibia and femur were removed, and suspicious soft parts clipped away. Bone ends were adjusted and the wound closed. The limb was dressed and put in a plaster-of-paris cast, reaching from metatarsophalangeal joints to the groin. The cast was removed in six weeks, and union was found to be complete. She was able to walk in eight weeks, and has remained well since.

Case 4.—Miss J., aged 28 years, says she has suffered from a swelled, painful and stiff knee nearly twelve years. She has been treated with braces, plaster casts and local applications, and as a result has experienced freedom from pain at various times, so that she could attend to her household duties for periods varying from five months to nearly two years. The writer has seen her at various times during the past four years and always recommended operative procedure until the present time.

Under chloroform anesthesia the articular surfaces were exposed by a transverse incision. The cartilage was found to be entirely destroyed and partly replaced by fibrous structures and granulation tissue, and the joint cavity was filled with a moderate amount of creamy odorless fluid. The joint surfaces were exsected, and the affected soft structures removed. One bone cavity in the tibia extended below the line of section; it was scooped out with a Volkmann sharp spoon. After irrigation, the leg was extended, dressed and placed on a Volkmann posterior tin splint. After one week the extremity was placed in a plaster-of-paris cast for six weeks. On removal of the cast, bony union was not firm. A moulded leather splint, reaching from a point midway over the thigh to the middle part of the calf was applied, with advice that the patient bear weight on the leg. Union gradually became firm.

Case 5.—Wm. B., aged 35 years, single, a farmer, says he injured his knee about ten years ago, resulting in swelling and pain, which never entirely left him. He has suffered many exacerbations, entirely incapacitating him for labor for varying periods.

At present his knee is swollen. All normal lines are obliterated, large bluish veins passing over the surface. There is a doughy sensation on palpation. The knee is sensitive on pressure. A fistula exists on the outer side of the upper end of the tibia, discharging on pressure a creamy odorless fluid. Denuded bone can be felt with a probe. There is no mobility of the joint. The condition was recognized to be tuberculosis. He suffered from general debility.

Under chloroform anesthesia the joint was opened by a transverse incision. Both articular surfaces were destroyed and replaced by a mass of more or less dense connective tissue, which was filled with a creamy fluid. On the tibial surface existed a cavity nearly one-half inch deep and in circumference as large as a twenty-five-cent piece. The patella was not involved. Two bone sections, one-third inch in thickness, one of the tibial and the other from the femoral end, were removed. It was found that the cavity in the tibia was not entirely included in the bone section, so the remainder was scooped away with a Volkmann spoon, the suspicious soft parts being clipped away. The wound was closed and dressed in the usual way, on a Volkmann splint one week, in plaster of paris six weeks. Union seemed complete. The patient went home on crutches. He returned in one year, with several fistulæ about the knee. The left wrist and dorsum of the hand was swollen and fluctuated. Both lungs were involved. The wrist was incised and drained, which gave relief from pain. Nothing was done with the knee. He was sent home, where he died six months later.

Case 6.—Mrs. K., aged 28 years, housewife, has one healthy child 3 years of age. She has always enjoyed fair health, except for painful swelling of the left knee, which began some eight years ago. The pain has never been acute, but has been more or less constant, with occasional exacerbations and remissions, but never entirely ceasing. There is much sensitiveness when the weight of the body is borne upon it. The swelling, which is devoid of redness, has very slowly but gradually increased; impairment of articular mobility has been progressive. She can not recall ever having had fever.

On admission we find a rather pale blonde of medium height, fairly well nourished, walking by the aid of a crutch. We find an enlargement of the left knee; no discoloration of the skin. The swelling is of a doughy consistency and sensitive on pressure; no fluctuation can be made out. This swelling extends upward into the upper recess of the synovial sac and downward as low as the insertion of the patellar tendon. The joint mobility is extremely limited and very painful. The patella seems to ride on a doughy springy substance. There are no fistulæ. She has not menstruated for nearly three months. Pregnancy is suspected. Otherwise she enjoys good health. We conclude that we have to deal with a tubercular arthritis.

She has been under almost constant treatment since the beginning of her affection. The methods of treatment have been of every variety, including prolonged extension and fixation, counterirritation, etc. We concluded to employ intra-articular injections of iodoform and the internal administration of creosote. This method was faithfully carried out for nearly three months, with no improvement, but rather a change for the worse. Resection was then determined upon, which was accordingly done on January 7, through a transverse incision. We found the entire joint cartilage replaced by a vascular structure composed chiefly of granulation and connective fibrous tissue, a network of capillary blood-vessels, a condition spoken of by Hunter as pannous and a hyperplastic synovitis. Many miliary nodules could be seen. In several portions were noticed perforations filled with caseous substance, leading into the subchondral, cancellated bone structure, which were deepest on the tibial articular surface—the probable origin. The crucial ligament was softened and easily broken down; the synovial sac, which was greatly thickened, was lined with, and largely composed of, a greyish, fragile, fungus structure.

The articular surfaces, after separation of the softened crucial ligament, to the thickness of one-third of an inch were removed with a saw. It was found that the osseous defect of the tibia was not entirely included in the exsected bone. The remaining bone cavity, the probable primary depot, was thoroughly cleaned with a sharp spoon. The entire synovial sac, together with all suspicious tissue was removed with a strong pair of scissors. After a copious 1 to 1000 sublimate irrigation, the exposed bone ends were adjusted, the wound was closed in the usual way. An antiseptic hygroscopic dressing was securely applied. The whole was placed and fastened on a Volkmann tin splint, sufficiently long to reach the gluteal fold.

The progress was absolutely afebrile. The first dressing was removed in three weeks, when all sutures were taken out and the leg enveloped in a plaster-of-paris dressing, which remained for nearly two months, and, on its removal, bony union was complete. The patient has been entirely free from pain since and has given birth to a healthy child, passing through a perfectly normal puerperium.

Portions of the excised synovial sac, which microscopically presented a pale, anemic, soft, nodular, fragile appearance, exhibited microscopically clusters of miliary tubercules, in section of which were easily recognized small round, epithelial and giant cells, containing tubercle bacilli. The contents of the cavity in the tibial head was made the object of the most careful study, and it was not difficult to find tubercules with the characteristic microbes located on and in the walls of the cavity. Neither tubercles nor bacilli could be found in the caseous mass itself, which was the result of retrograde changes, due to a local anemia and the products of tubercle bacilli, the mass consisting of a coagulation necrosis and caseation, usually containing no formed elements.

CASE 7.—E. D., aged 25 years, a clerk, single, has suffered from a swollen and painful knee for seven years. He has been under orthopedic treatment nearly the entire period, and has had periods of freedom from pain for varying periods during this time. Joint immobility has existed from the commencement. We find a swelling involving the entire joint, with fluctuation in its inner aspect. The condition is one of typical tuberculosis. Exploratory incision was recommended, to be followed by resection or amputation if necessary.

Under chloroform anesthesia an incision beginning at the outer margin of the patella, extending backward almost to the hamstring, freely admits the index finger, which reveals a panarthritis, with complete destruction of the articular cartilage. A typical resection is made, the final outcome of which is painless. He has a useful but stiff extremity.

Excision of the knee-joint is no longer an experiment. This operation has found a permanent place in surgical procedure, and while the method of procedure and detail may still be a matter of discussion, the object to be attained is a settled one.

Surgeons still take issue as to the time when operation is indicated, but all agree that when a reasonable amount of mechanical and local treatment has not stayed the progress of the disease nor improved the condition, operative intervention must be resorted to. All agree that a stiff extremity is preferable to the best artificial limb, and amputation becomes necessary only when the pathologic factors have either transcended certain bounds, or secondary infection threatens, or when employed as a life-saving measure.

Early recognition and early treatment in the critical stage of joint tuberculosis can not be too greatly emphasized. Rheumatism, sprain and growing pains too often mislead to a false security. The awakening to the true state of affairs occurs only when the mischief has become irreparable. Every painful knee-joint must be regarded with serious consideration. It is better to err in the direction of ultimately finding a painful knee-joint a simple traumatism, than to mistake a tuberculous knee for a sprain or contusion.

When shall we resect the knee-joint for chronic inflammatory disease? Here we differ, sometimes widely, owing it seems, largely as the bulk of our cases come to us in private or hospital practice. Those who see their cases early and appreciate their true nature, will see a large percentage of them recover by non-operative means. While the hospital surgeon has to deal chiefly with the chronic, badly managed and neglected cases, he naturally finds the bulk of his subjects suited only to radical operative intervention.

When considering our cases we note that they were all late resections. I am convinced they were unnecessarily late. Had radical procedures been adopted earlier, we could in all cases have saved much suffering and much time, which is so valuable to the class of individuals who comprise the larger number of these cases. At least one life, Case 5, might have been saved. Does an individual gain anything who recovers with an ankylosed joint after two or more years' mechanical treatment? Would it not be advisable in all cases where we are convinced that the ultimate outcome will be ankylosis, to open the joint early, exsect all diseased structures,

and save from one to two years of pain, at the same time restoring the individual to usefulness? The outcome of chronic knee tuberculosis is a fixed joint and more or less deformity. Resection produces a stiff joint minus the distress, incapacity, loss of time, possible metastatic infection and deformity, and in some cases prevents loss of life. I believe it to be correct practice to resort to early exploratory incision, provided improvement has not commenced in three, or at most four, months. Explore the joint with the finger, and in certain cases expose the articular surfaces to ocular inspection, as we have done repeatedly in traumatic infected cases. If the joint cavity is free from tubercular infection no harm can be done. If the primary focus can be found it can easily be removed. If the joint surfaces are destroyed, time is gained by their early removal.

Our plan has been, if after two or three months of mechanical management no improvement has been noted, or if after even a month, no progress has been made, to explore the joint by puncture or incision. If the exploring finger found limited lesions, irrigation was done, if small bone lesions could be detected, curette. If the articular surface was involved, enlarge the incision and exsect. If the cases were old and had undergone more or less treatment, resection was recommended.

The seven cases of resection in our series do not comprise the entire number in whom this operation was indicated. In a number of those that passed from observation, radical means were insisted on, but were refused by patients and friends. It will be noted that our resections were all in adults.

As we pass to the consideration of the method of operative procedure in our cases, the one which served us seemed the simplest possible. The transverse incision of Volkmann was employed in all. Without entering into the respective merits of the incisions employed by Fenwick, Ollier, Heuter and others, there certainly is none that more quickly, simply and completely exposes the entire joint surfaces than the transverse. The facility with which the affected bone and soft structures can be removed can hardly be improved on. The excision of the diseased tissues was always carried out with extreme care, cutting well into healthy structure. The bone section was always made parallel with the articular surfaces. The V-shaped section of Phelps and mortises by others were never attempted. There never was difficulty of maintaining the sawed ends of the bones in apposition. The method of closing the joint capsule and uniting the patella as described in our first case was adhered to in all. Bone pegs, nails or wires to hold the bone in apposition were never used, experience having proved that they are not only unnecessary, but useless and sometimes harmful. They prolong the operation. They are fastened in cancellous structure which can not hold firmly if strain should be put on them, and in most cases must be removed by secondary operation.

Bilateral tubular drainage was used in several cases, but as we gained more confidence in our aseptic procedure, it was omitted. When much oozing after more than ordinarily extensive operation was anticipated, the extremity was placed for a week on a Volkmann posterior splint, and then in a plaster-of-paris cast reaching from the metacarpophalangeal joint to the groin. I am convinced that in the majority of instances the plaster cast can be applied immediately.

Two of our cases underwent amputation because the tubercular process had invaded the shaft of the long bones, and we were not at all sure that the tubercular process could be entirely removed.

Antituberculous medicaments were not given internally after these radical operations. Abundant food, good air and sunshine will restore these individuals to vigor in less time than any pharmaceutical preparation of which I have knowledge.

DISCUSSION ON PAPERS BY DRS. MOORE AND JONAS.

DR. DE FOREST WILLARD, Philadelphia—Dr. Moore has certainly indicated the proper method of procedure in cases of tuberculosis of fascia, where we are satisfied that the bone is not diseased, or where, upon laying open the sinus, there is no implication of bone. The free laying open of the sinus, no matter if it is twelve inches in length, and the excision of all tubercular tissue is the only form of removal that is likely to give us quick and positive results. We know of no caustic that is to be compared with the knife and scissors; they only are the proper tissue destroyers in tuberculosis. With the thorough excision of all diseased tissue at the time of operation, and immediate closure, we can hope for excellent results. In regard to knee-joint tuberculosis, it is difficult to lay down any positive rules for operation, but I think that the most certain indication that we have, or the rule we must apply most frequently, is in regard to the age of the patient. The method of procedure that should be carried out in young children—that is, whether we shall adopt radical or conservative measures—will depend upon a variety of conditions. By conservatism I do not mean the conservatism of doing nothing or little; I include in conservatism everything even to amputation. As a rule erasion in children should be practiced early; remove the tubercle foci, hard and soft, and you will give the individual not only a good limb but one of considerable length; that is the important point. So often when children's knees are excised, we have shortening, of three, four, or five inches, giving a useless limb; but if we can do two or three operations of erasion, avoiding the epiphyseal lines, get rid of all the tubercle foci, we have benefited him exceedingly. Excision I do not like in children: erasion is far better. With adults, excision and amputation come in most largely; excision is ordinarily preferable, but the line must be drawn between children and adults.

In regard to injections of iodoform I desire to go on record most absolutely and positively as among those who have from experience become dissatisfied with its use. It may be that I am less cleanly than others and yet I yield to no man in my belief in the practice of absolute cleanliness, but I must say that my experience in injections of iodoform is that it is worse than worthless, and that it often increases suppuration. Yet I believe that I have been absolutely cleanly in these injections.

In regard to extreme conservatism, I do not believe in it; I believe that we should be conservative in every case, but that necessary operation is often conservatism.

In knee tuberculosis, early diagnosis is of the utmost importance; the time to treat knee tuberculosis is the first two weeks. Let us get rid of the false idea that rheumatism is common knee-joint disease in the hip in children. Let us consider and treat these cases as tubercular ones, and not go on for one or six months with the death-dealing plan of saying that it is "only rheumatism." I believe that tuberculosis can be arrested, if taken early.

DR. H. M. SHERMAN, San Francisco—Dr. Moore's paper illustrates what has been experienced by all of us, that we should open a tubercular abscess and find that it is not connected with a bone, but in the soft tissues. Some of us have at times treated a joint for tuberculosis where the lesion was tuberculosis in the muscles near the joint. The question is one which is annoying, for one is liable to keep a child on an apparatus for a considerable period of time which would be unnecessary. I have done this sometimes and have seen it done by others. The differentiation between a soft-tissue tuberculosis and one originating in the bone is an exceedingly difficult matter when the abscess is close to the joint. I do not know of any way of definitely doing this short of the use of the X-ray. So far as I understand that at present, a great deal will depend upon the way the showings of the X-ray are interpreted. If, in a given case, the abscess is found to be not connected with the bone, it would be proper and wise to follow out the plan of Dr. Moore. If it is connected with the bone, then that is a complication of the bone lesion and must be considered to be one of the symptoms. from its title, that it would take up the diagnosis of the focus from its title, that it would take up the diagnosis of the focus of tuberculosis at the knee-joint before it had gotten on to infection of the joint itself. In that lies the best chance and practice for treatment of knee-joint tuberculosis—the early

recognition of the location of foci and their removal before the joint is attacked. Dr. Jonas is right in saying that we frequently do not know whether the lesion is primarily in the synovial membrane or bone, but as it is in the bone in the vast preponderance of cases, we must assume that it is there until the contrary is proved. One's guide is one's knowledge of where the foci are usually found in the bone, and the testimony of the X-rays to definitely locate them will help one in saving the joint. These cases, locally do not need a drug. Iodoform is, so far as my experience goes, an inert drug. One question as to the management of focal tuberculosis is how the growth of the limb be affected afterward. All of the cases that I have operated on have had certain injury done to the epiphyseal cartilage and following that there has been partial inhibition of the growth of the limb; however, the joint was an active, useful joint, and the limb was perfectly useful, with the help of a little wedge underneath the sole. One more thing regarding excisions. I do not think it wise to begin an exsection of the knee unless the surgeon has full permission to amputate it, in the course of the operation, it proved necessary to do so.

DR. J. E. MOORE, Minneapolis, Minn.—I have nothing further to say for my own paper. In discussing Dr. Jonas' paper, in answer to his question: Would it not be well to operate on these cases early? I would say, "yes," with the same reservation that Dr. Willard put—provided the patient is old enough. Excision of the knee-joint in children is scarcely justifiable under any condition. If the child were my own, and there was a useless limb after erasion or mechanical treatment, I think I would prefer to have it amputated, because these joints always become deformed in later years and are an incumbrance, not as good as a good artificial limb. If the patient is over 18 to 20—yes, excise early, where your conservative measures are failures—when the patient is growing worse rather than better. I want to go on record as to the uselessness of iodoform in the local treatment of tuberculosis. I have some results in other directions, but not in tuberculosis. There was a time when I used the Esmarch. Since I have ceased using it I have less oozing of blood. I have for the last three or four years employed the method first suggested by Ferguson—making a slight ridge transversely in the femur and a corresponding gutter transversely in the tibia. Thus, I am sure that my toes will not rotate too far out or in. You can do this without shortening the limb to any degree. Just one word about conservatism: I wish to insist that conservatism does not consist in simply refusing to use the knife. The best conservative agent I know is the knife, in good, skilled, judicious hands.

DR. A. F. JONAS, Omaha, Neb.—One is always very much at a disadvantage when reading a paper in the abstract.

The great difficulty in this subject is early diagnosis. They come on with a sprain or with rheumatism for years before the patient gets into the hands of the surgeon.

By conservatism I mean anything that conserves the function of the joint for the individual—whether it is necessary for that purpose to use a knife, sharp spoon or any other instrument; that is conservatism. To let a thing alone is criminal. To do something for the purpose of restoring the function I believe is conservatism. For that reason I have recommended that we shall make early operations. If we find after mechanical treatment that we have made no advance in treatment, make an incision in the edge of the patella, exposing the healthy joint. If you find nothing, close it up again and you have done no harm; if you have proceeded in an aseptic manner you have restored the joint to the best possible condition. I wish to place myself on record with the other two speakers—that I have never obtained one good result from iodoform emulsion. I have not made anybody worse, but I do not recall a case made better by it. I have had better results with carbolized or sublimate solution.

THE LONGITUDINAL SILVER-WIRE SUTURE.

"EN ETAGE" IN THE CLOSURE OF WOUNDS.*

BY M. L. HARRIS, M.D.

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CHICAGO.

Excluding the viscera, etc., the most important incihave to consider: 1, accurate coaptation of like structures; 2, the suture material; 3, the method of applying the suture. All surgeons agree as to the end to be accomplished, differences existing only as to the means.

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Excluding the viscera, etc., the most important incision with which we have to deal is that of anterior median celiotomy, and while our remarks are pertinent to incisions generally, they find special application in the closure of this one.

That like structures should be coaptated in order to restore as nearly as possible the normal relation of the parts is so universally recognized that no argument is necessary to support the statement. The coaptated parts should be in intimate contact throughout in order that union may take place with the production of the least possible amount of cicatrical tissue, as the lesser the amount of new connective tissue formed between the divided edges, the more intimate and firmer the union.

The selection of the suture material can not rest simply upon individual preference, but merit must decide. The points which specially enter into competition are: 1, ease and certainty of sterilization; 2, imbibition capacity or extent to which fluids are permitted or favored to pass along the suture. Other points which may be raised for or against the various suture materials are of minor importance in comparison with the two just mentioned. Only the more commonly used materials will be considered—catgut, silk, silkworm gut and wire—as these four represent each a distinct class.

Concerning the first point, sterilization, there can be no question as to the certainty of being able to sterilize all these materials except, perhaps, the first. Wire is certainly the easiest to sterilize, with silkworm gut next. Both these materials simply requiring boiling a few minutes in water, and may be easily prepared with the instruments each time as needed. Silk, to be absolutely reliable, requires fractional boiling, hence, must be prepared beforehand and preserved ready for use. With catgut the question is not so simple. While I think catgut can certainly be sterilized by any one of several methods, still the methods are time-consuming, and considerable experience is necessary with some of them in order to insure perfect results.

The second point, imbibition capacity or the passage of fluids through or along the suture, is of very great importance, for to this property is due most of the secondary infections, stitch-hole abscesses, etc. It is well known that it is practically impossible to render the skin and its glandular appendages germ free. Lauenstein states that even after repeated or, better still, several daily disinfections by the most approved methods, the skin was found germ free only 33 times in 58 cases. A suture, then, which passes through a germ-containing skin, by imbibition or capillary attraction, may permit germs to pass with the fluids from the superficial to the deeper portions of the suture tract, where, the tissues being less immune than the surface epithelium, the germs develop and local infections take place.

The facility with which the different suture materials here considered permit or favor this infection of the deeper tissue has been very thoroughly studied by Troller[2]. Briefly, Troller proceeded in the following manner: Operation wounds, produced under the strictest technic, were sutured in the usual manner with the different materials here under consideration. Control experiments showed the suture materials were sterile when used. After forty-eight hours the sutures were removed and divided into two portions, the extracutaneous and the subcutaneous portions, or that part which lay on the skin was separated from that part which was buried in the tissue. These separate parts were then ex-

[1] Arch. f. Klin., B. liii, H. 1.
[2] Beit. zur Klin. Chir., B. xxii, H. 441.

amined bacteriologically, with the following results: The subcutaneous loop was found germ free in 82.4 per cent. of the wire, in 60 per cent. of the silkworm, in 30 per cent. of the silk, and in 25 per cent. of the catgut sutures. The extracutaneous loop was found germ free in 53 per cent. of the wire, in 7 per cent. of the silk, and only in 4 per cent. of the catgut sutures.

The germs found on the subcutaneous loops were always of the same kinds and varieties found on the skin and the extracutaneous loops, showing conclusively that the germs had gained the deeper parts of the tract by being transmitted along the suture material by imbibition or capillary attraction. When judged by the two points mentioned above, namely, facility of sterilization and imbibition capacity, the materials stand in point of excellence in the following order: wire, silkworm gut, silk, catgut.

It will thus be seen that wire, either aluminum, bronze or silver, heads the list of suture materials. The next point for consideration is the method of application.

It is not the intention to discuss the various methods of suturing commonly employed, but to direct your attention to the technic and the advantages offered by the longitudinal silver-wire suture. It is called the longitudinal suture because it parallels the wound. The idea of a longitudinal suture is not new, as it dates back to Chassaignac, who in 1852 employed a silk suture, extending lengthwise, and lying beneath the surface, which he called *"suture celluleuse" or sous-cutanee."* The subcutaneous continuous catgut suture has long been used by many, and Daurand, in 1896, in a thesis, again elaborated the many advantages of the *"suture intradermique."* The use of silver wire for the subcutaneous suture had its origin in Johns Hopkins Hospital.

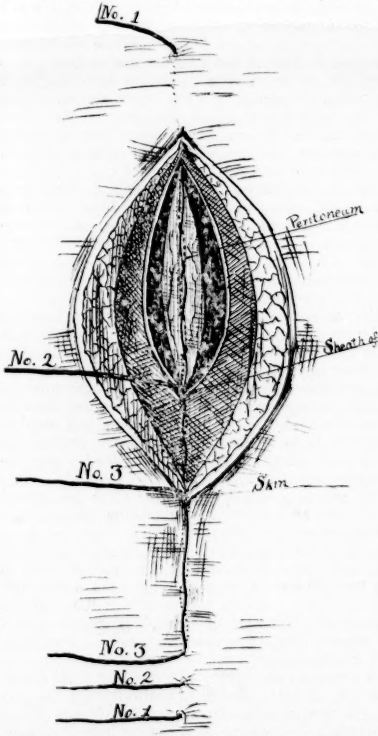
I have extended the use of the longitudinal suture so as to include, not only the cutaneous edges but the deep layers as well, making a longitudinal suture *"en etage."* The suture will be described in connection with an anterior median celiotomy. Three layers are employed: peritoneal; fascial or sheath of rectus; subcuticular.

For the peritoneal layer, silver wire No. 24 to 22 is threaded directly to a smooth, round, non-cutting, curved needle. The needle is made to enter the skin in the midline, one to three centimeters from the angle of the incision, and penetrate obliquely all the tissues down to the peritoneum, where it should appear at the angle of the peritoneal incision. The obliquity of the transfixion prevents too sharp an angle in the suture at the peritoneum.

The peritoneum is now taken up with the needle, parallel with and quite near to its edge, first on one side and then on the other, constantly in an advancing manner until the entire length of the incision has been traversed. The grasp of the needle should not be more than a centimeter in length, and the point of entrance of one grasp should be but very slightly in advance of the point of exit of the last grasp. The suture is then brought obliquely to the surface about the same distance from the cutaneous angle at its point of entrance. The second suture, wire No. 22 to 20, enters in the midline, but a little nearer the angle of the incision. It penetrates as far as the sheath of the rectus muscle, where the edges of this fascia are taken up longitudinally in exactly the same manner as has just been described for the peritoneum.

No sutures are applied to the recti muscles. At no point in the midline do the recti muscles lie in contact with each other, hence, in closing a median incision it is unnecessary to suture together the recti muscles with the expectation of obtaining union between them. The dense, thick, conjoined fascia of the linea alba in the upper part of the abdomen of the firm anterior layer of the muscle sheath below Douglas' fold is the all-important layer to be sutured. This is the layer in which the most perfect apposition, edge to edge, should be secured.

Ventral hernia never occurs with this layer covering the sac, but the sac invariably protrudes through an opening, defect or imperfection in this layer. If this



Showing the three layers of wire sutures in partially closed medial incision. Suture No. 1, peritoneal suture; No. 2, suture of fascia; No. 3, subcuticular suture.

layer be perfectly restored, if the edges be accurately coaptated and the union secured throughout between them, with the production of the least possible amount of cicatrical tissue, ventral hernia will never occur, regardless of the relations of the recti muscles.

The great trouble with all transverse or transfixion sutures is that the edges of this layer are not accurately coaptated, but gaping takes place between the stitches, thus materially interfering with perfect, close, definitive union. If the finger be passed along the line after the usual transverse suture, the tip may frequently be felt to engage in the small defects caused by the gaping between the stitches and at such places the occurrence of a ventral hernia may often be predicted with reasonable certainty. By the use of the longitudinal silver-wire suture, as here described, the edges of this fascia are

accurately coaptated throughout in the most perfect manner, and the finger passed along the line of incision meets with a firmness and solidity of union not found in any other method of suturing.

The third suture is the usual subcutaneous or subcuticular suture. The wire enters and leaves at the angles of the incision running along in the corium, in and out, in the same manner as has been described for the other two. It does not appear on the skin at any point except where it enters and leaves. After the wires are introduced, they are drawn back and forth until they are perfectly straight and move easily through the tissues. The wound may now be dressed in any manner one chooses. The method I use, and think the neatest and best, is to seal the line of union with silver foil after Halstead. Place on this a compress of a few layers of plain sterile gauze over which are folded the ends of the wires, which should be left long. On these is placed another similar compress followed by the usual dressing of plain sterile gauze and cotton.

The wires are usually allowed to remain from ten days to two weeks. To remove the wires, they should be drawn back and forth gently until loosened in the tissue then one at a time cut close to the skin and withdrawn. They are easily removed, with scarcely any pain. Care should be taken not to break the wires by pulling suddenly before loosening them.

While the suture has been described in connection with the closure of median celiotomy incisions, it finds many other valuable applications. In closing the muscle-splitting incision in interval operations for appendicitis, one wire parallels the fibers of the internal oblique and transversalis, entering and leaving the skin some distance from the cutaneous incision, and crossing it almost at right angles. Another wire parallels the fibers of the external oblique, and a third forms the subcuticular suture.

In the radical operation for hernia after the general plan of Bassini, I think it a most valuable suture. The first wire unites the conjoined tendon with the inner edge of Poupart's ligament, closing firmly this layer, leaving but sufficient opening at the internal ring to permit the safe exit of the cord. The cord is then laid on this layer and a second wire paralleling the external oblique securely closes this layer with the exception of a small external ring. The usual subcuticular wire completes the operation.

I can not speak too highly of the longitudinal silver-wire suture *"en etage"* in the radical operation for hernia, as the results have been so very gratifying. There are no absorbable sutures to soften or non-absorbable sutures to come out at some future time. Other uses of this method of suturing will readily suggest themselves.

In addition to the reasons already given for selecting silver wire as the suture material, it possesses another distinct advantage over all other materials when applied longitudinally, in its rigidity. When the wire is drawn straight the edges of the wound are kept in perfect coaptation, the rigidity of the wire preventing the slightest gaping or bulging. The application of lead plates, shot, buttons, rolls of gauze, etc., to the wire to keep it tense are entirely unnecessary.

The technic of application of the suture is very simple; the following points, however, are of sufficient importance to merit mention: Keep the wire perfectly smooth, and free from kinks; do not draw the wire all the way through at each stitch, but have only sufficient lead to permit the use of the needle; draw the suture straight, and see that it can be moved easily through the tissues.

It is not advisable to have a single suture through firm, deep tissues longer than 15 cm., owing to the possibility of breaking it when attempting to withdraw it. A suture may be brought to the surface at any point and another one begun without in the least weakening the line or modifying the principle.

The advantages of the longitudinal silver-wire suture may be briefly summarized as follows:

The material can always be sterilized with ease and certainty.

It is non-hygroscopic, consequently does not convey infection to the deeper tissues thus producing stitch-hole abscesses, etc.

The edges of the wound throughout its various layers are more perfecly coaptated than by any other method of suturing.

The accurate coaptation leads to an intimate union with the production of the least possible amount of new-formed connective tissue, and hence the greatest possible strength of union.

The very narrow linear cicatrix is a great improvement in a cosmetic sense, as there is an absence of the numerous lateral stitch-holes, the scars of which are often more disfiguring than that of the cut itself.

The suture will withstand any desirable amount of traction without yielding.

It can be easily and quickly applied.

DISCUSSION.

DR. J. P. LORD, Omaha, Neb.—I am greatly impressed with the value of this method, as exemplified in this paper. Following the work of those who early introduced the use of the buried silver-wire suture, I had some experience in the use of silver wire, and came to the conclusion which has been arrived at by those who worked with it, and that is that it is of no value as a permanent support. I discarded the deep silver-wire suture. I have used wire, wormgut and catgut for my superficial skin wound closures. I have used all of them; and I have buried them, to suit my fancy in individual cases. I, too, have recognized the relative merits of the different materials, and have acknowledged the superiority of wire; yet with the thorough methods of preparation which we have for silkworm gut, I have confined myself mostly to the silkworm gut for subcutaneous sutures. With this experience—which has been considerable, having closed most of my hernia incisions, most of my face-wound incisions with subcutaneous stitches—I have had opportunity to judge of the value of the subcutaneous method. Now, as the doctor has demonstrated the utility of the temporary silver-wire suture in the deep structures as well as in the skin-wound sutures, I am particularly impressed with the value of his method, so much so, that I am going to investigate its value. I believe that this is founded on scientific data given you in the percentages of the risk in the use of these different materials, and following out his technic, as given us, I believe much is to be gained in the use of this method.

DR. J. B. EAGLESON, Seattle, Wash.—Is the silver wire as easily removed as the silkworm gut?

DR. W. J. MEANS, Columbus, Ohio—I have been very much interested in the method of closing incised wounds by subcutaneous removable sutures, as outlined by the author in this paper. I have been using the same method in part for several years. it has been my experience that silkworm gut is much easier placed than silver wire, but harder to remove. I have had the wire break in removing it in a few cases. The suture is much harder to remove from the integument than from the fascia or peritoneum.

During the past two years I have been using galvanized, annealed steel wire. It was suggested by Dr. Baldwin of Columbus, and' I believe, he has been using it almost exclusively. This wire is much stronger than silver wire, fully as pliable, and is tolerated by the tissues just as kindly. I have never had a suture of this material break in removing it. It is much cheaper than silver wire. I suggest a trial of this wire to those who use the subcutaneous method of closing incisions. It can be had at any good hardware store.

DR. M. L. HARRIS, Chicago—The silver wire is as easily removed as silkworm gut. The influence of silver on wounds has been found to be beneficial. The silver wire probably stands at the head of wire materials in the percentage of non-

infection of the deep parts. This is the particular advantage of still adhering to silver wire: There is less infection of the deep tissues following the use of silver than of any other wire, except perhaps aluminum bronze, which has also been found to have a beneficial effect when in contact with living tissues. These wires are superior to any of the iron wires which have been used.

FEMORAL ARTERY AND VEIN.

THEIR DESTRUCTION WITHOUT LOSS OF LEG.*

BY B. MERRILL RICKETTS, PH.B., M.D.
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The experiments of Niebergall upon the circulatory system have shown that the upper and lower extremities have many times been needlessly sacrificed. It was shown by him that the resistance of the valves of the veins could be overcome by moderate arterial pressure, thus making it unnecessary to ligate the artery in cases of venous occlusion. Branne taught that the presence of these valves precluded the possibility of collateral circulation, and that ligation of the vein alone would render gangrene inevitable.

The modern methods of dealing with blood-vessels have proved beyond peradventure that many teachings concerning them are fallacious, but, like the progress in all other departments of science, many erratic steps must be taken before the goal is reached.

While the anastomosis of arteries and veins has been accomplished, it has not been as satisfactory as hoped for. It has been shown that the lumen of an ass's abdominal aorta may be sufficiently restored by end-to-end anastomosis to permit of constant and sufficient circulation. This demonstration was the basis upon which all subsequent work in this direction has been done.

So far as the work with the blood-vessels of the human body is concerned, nothing has been presented which is at all satisfactory. The experiments of both end-to-end and lateral anastomosis in the smaller animals and the actual work with the human blood-vessels have shown that complete occlusion sooner or later takes place, thus showing that the results are no better than the immediate occlusion by ligatures. It is safe to say that sepsis has been more responsible for gangrene—especially in the moist form—than simple occlusion.

The older operators of this country found gangrene resulting from ligation of the subclavian artery—outer third—in from 8 to 12 per cent; external iliac artery 12 to 20 per cent; femoral artery 10 to 15 per cent. The mortality of ligation of the femoral artery is shown by the following reports:

	Operations.	Deaths.
Norris' tables	204	50
Crisp's tables	122	15
Grey's Hospital, 1862 to 1876	24	1
Syme	23	0
Pennsylvania Hospital, 1868 to 1876	11	2
G. H. Potter	5	0
McNamara	8	1
Gross	2	1
Total	399	*70

*23 per cent.

Ligation in these cases was, no doubt, for various causes; and it is fair to presume that the leg was preserved in all in which death did not occur. The cause of death in four of Norris' fifty deaths is not stated. Twenty-three died from gangrene, eight from hemorrhage, five from phlebitis, one from sloughing of the sac, three from tetanus, and the rest from "fever, hectic, pyemia, etc."

These compilations, like many others, are very unsatisfactory. They do not show at what point upon the artery the ligature was applied, or the cause of its application. They do, however, indicate that the percentage of cases resulting in gangrene or death is far greater than with the modern method of doing the work.

Of the 299 operations reported by Norris, 7 per cent. resulted in gangrene. These percentages have been very much reduced during the days of more recent antiseptic surgery.

The obstruction of veins occurs as often, and is as serious as when it occurs in arteries. The sudden obstruction of either is likely to produce moist gangrene, while slow obliteration results in dry gangrene. Careful consideration of the collateral circulation of the thigh would doubtless disprove the statement that there is more danger of gangrene ensuing from a ligature applied between the epigastric and profunda than when it is applied either above or below them. Langenbeck's philosophy, which taught that it was necessary to ligate both in case of injury of one, has, like that of Branne, been proved erroneous. Hunter, who was the first to ligate the artery in the canal bearing his name, thought it safer to ligate the external iliac artery than any part of the femoral artery.

Billroth mentions a case of chronic occlusion of the ascending vena cava, collateral circulation having been established by the superficial veins, which could be seen enormously distended. Dr. R. J. Pumphrey of Massillon, Ohio, reports by private correspondence recovery in a case of injury during operation for strangulated hernia to both the femoral artery and vein, which necessitated complete occlusion of both by ligature; recovery was uneventful.

Dr. H. K. Adams of Maysville, Ky., reports a case of a male, 40 years of age, who received a pistol ball in the right Scarpa's triangle; the femoral artery was partially severed; large clots and distension prevented death from hemorrhage for forty-two days, when the leg was amputated below the knee, sepsis no doubt being more responsible for gangrene of the foot than mere occlusion; recovery followed with a useful knee-joint.

My own experience is limited to the following three cases:

CASE 1.—A male 38 years of age, with strangulated femoral hernia; the femoral vein was ligated below Poupart's ligament, for laceration; no unfavorable results.

CASE 2.—A male, 42 years of age, with sarcoma of the left iliac fossa; the external iliac vein was lacerated during operation; ligation without any indication of occlusion.

CASE 3.— A male 36 years of age, with sarcoma of the sheath of the sartorius muscle; new growth about three pounds in weight; incision extending from Poupart's ligament to knee; both the femoral artery and vein, together with the sartorius muscles were so entangled in the new growth that their removal was necessary; a former extirpation of the growth no doubt made their removal more difficult. Recovery was rapid and uneventful, comfort and the use of the leg being assured for eight months, at the end of which time the new growth caused him to take his bed, upon which he will soon find relief in death.

Either one of the following varieties of the femoral artery may exist, and thereby explain how the leg may be nourished when a femoral artery is ligated, especially if either one or more of them should be present with an apparently normal femoral artery.

"1. The femoral artery may divide below the origin of

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the profunda into two vessels which reunite at a variable distance above the opening in the adductor magnus, to form a single popliteal artery.

"2. A vas aberrans may leave the external iliac artery and running by the inner side of the common femoral artery, may join the superficial femoral about the apex of Scarpa's triangle.

"3. The main artery of the limb may be found wholly at the back of the thigh, and be derived from a greatly distended sciatic artery.

"4. The profunda may arise from the inner or from the posterior side of the main vessel, and may take origin more than one inch or less than two inches below Poupart's ligament.

"5. The circumflex arteries may arise in whole or in part from the femoral; this especially applies to the internal circumflex.

"6. The femoral may give off the deep epigastric, the circumflex iliac, or the great saphenous artery. The last named vessel arises above or below the origin of the profunda, and passing along Hunter's canal, becomes superficial at the inner side of the knee, and follows the internal saphenous vein to the ankle." (Treves.)

CONCLUSIONS.

1. Amputation of the leg is not always necessary when the lumen of the femoral artery or vein or both, is suddenly or slowly occluded by injury or otherwise.

2. It is better to ligate the femoral artery or vein, or both, and give the patient the benefit of a doubt than to amputate immediately.

3. It is impossible to determine the circulation of the thigh or any given part of the human body without a complete dissection, which can only be done postmortem.

4. Ligating the femoral artery or vein, or both, in chronic pathologic conditions of the thigh, seems less likely to result in death or gangrene than when the ligature is applied in case of accidents in a normal thigh.

5. It can not be determined what role, if any, any one of the six varieties of the femoral artery has played in any case in which the femoral artery or vein, or both, have been ligated, as no record of dissection seems to have been made.

6. While end-to-end anastomosis may be accomplished, complete occlusion sooner or later takes place.

7. Suturing and the application of ligatures to arteries and veins which have been lacerated have no advantage over complete immediate occlusion by ligature.

8. Gangrene is possibly due to septic infection and not merely to the occlusion of the femoral artery or vein, or both, unless the vessels for collateral circulation are absent.

9. The preservation of the leg does not seem to depend upon the ligating of the femoral artery or vein, or both, at any particular point.

DISCUSSION.

DR. THOS. H. MANLEY, New York City—This paper of Dr. Ricketts is peculiarly rich in suggestion and raises so many points for discussion, that to cover them all would be impossible, within the range of time permitted. Those of us who have made an experimental study of the circulation must come to the conclusion that all the phenomena of the circulation are not altogether understood by the physiologist. As an illustration of that, in the course of my own experiments I ligated the aorta, the iliac and the brachial arteries of a frog, but found that the circulation went on quite the same as when the heart was unhampered. I found, therefore, that the circulation was to a certain extent quite independent of the heart's action. The point raised by Dr. Ricketts is a very important one, and I have been able to verify it several times in cases of moist gangrene: the primary trouble beginning in the veins. It is probable that in almost all these cases where the senile changes set in the primary lesion is in the veins of the periphery of different areas of the trunk. We have also found lately that what has been submitted by Bennett, in the operation for varicose leg, is another rebuttal of the theory, showing that the simplest way to treat a varicose vessel is to strip the saphenous vein, choke off the circulation, divide it, and destroy the vein, thereby diverting the blood from the periphery to the center, although the distal distended veins remain.

TUBERCULOSIS OF PHARYNX.*

WITH PRELIMINARY REPORT OF TUBERCULOUS INFECTION OF TONSILS AND LYMPHOID TISSUE OF NASO-PHARYNX.

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It is a strange fact that although pulmonary tuberculosis carries off more of the human race than any other disease, its local manifestations in the upper respiratory tract occur with comparative infrequency. The larynx is much more often affected than the pharynx. In 1226 cases of tuberculosis, Heinze found the larynx involved in 276 or 30.6 per cent. Mackenzie, in 100 cases in the second and third stages, found changes in the larynx in 71. Tuberculosis of the pharynx must be regarded as an extremely rare condition. Lennox Browne[12] states that acute tuberculous sore throat occurs in about 1 per cent. of all cases of tuberculosis of the upper air-passages. This percentage, according to the censensus of opinion, is if anything too large. Williglk, in 1307 autopsies, found only 1 case of pharyngeal tuberculosis. Bosworth[28], who thinks that tuberculosis of the fauces is an evidence of acute miliary tuberculosis, has only seen 5 cases. Levy[20] has reported 162 cases of tuberculosis of the pharynx and larynx. In 17 of these, the pharynx only was diseased. It is rather difficult to explain if the statement made by Wright[17] and Schmidt[29], that the tubercle bacillus may penetrate the perfectly intact epithelium, is correct, why tuberculosis of the pharynx is so rare, as bacilli are frequently found in the nasal cavities and throats of healthy people. Strauss[5] examined the dust and mucus from the nasal cavities of 29 persons, all in the best health, with no indications of tuberculosis. Bouillon cultures were made and the fluid injected into 29 guinea-pigs. Injections were made into the peritoneum: Seven died of septicemia or purulent peritonitis, 13 remained healthy and 9 got tuberculous processes, which plainly started in the peritoneal cavity.

In children pharyngeal tuberculosis is even a much rarer condition. Schifferowitsch[3], in a thorough search of the literature, has been able to find only 87 cases reported up to 1887, and only 1 case in a child—6 years old. Other cases of faucial tuberculosis in children have been reported by Siegert[30] and Gee[1]. In one of Siegert's cases, that of a boy aged 11, there were present superficial ulcers of both tonsils, mucous membrane of soft palate, uvula and a portion of the posterior wall of the pharynx. There was also tuberculosis of the lungs. In the second case, a girl of 4½ years, the ulceration involved the right side of the soft palate, the right palatine arch and the left faucial pillar. The lungs were not involved in this case. In Gee's case, a child 7 years old, there were tuberculous ulcers of the soft palate, uvula, base of tongue and epiglottis; there was also pulmonary

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tuberculosis. Frobelius[2] has recorded 18,569 autopsies of infants in the first four months of life, in 416 of whom tuberculosis was the cause of death; the pharynx was not affected in a single case.

Pharyngeal tuberculosis is as a rule secondary to the lung involvement, or may be coincident with it and is usually a symptom of acute general tuberculosis. In many cases the sputum causes the infection, but in the large majority it is undoubtedly conveyed by the blood and lymph channels. The ulcers probably result from the breaking through of tubercles toward the surface of the mucous membrane, and the breaking down of many small tubercles forms the larger ulcers. The rapid extension of the ulceration is without doubt favored by the presence in the throat, at the same time with the tubercle bacilli, of pus-producing bacteria. Fraenkel[4] has demonstrated the frequent presence of the staphylococcus pyogenes aureus and the streptococcus pyogenes in throat tuberculosis.

Pharyngeal tuberculosis may be also secondary to tuberculous caries of the cervical vertebræ. According to Osler[13], tubercular adenitis of the cervical glands and tuberculosis of the pharynx in children, may follow tubercular processes of the axillary glands or carious cervical vertebræ.

Primary cases, although exceedingly rare, have been reported. Rosenberg[42], in 22,000 throat diseases, has reported 22 cases of pharyngeal tuberculosis, 3 of which were primary. Out of 7 cases observed by Delavan[43], one had its primary seat on the velum. Pluder[23] has seen a case in a male of 16 years. There was extensive ulceration of the posterior wall of the pharynx extending into the posterior nares, and of the surface of the right tonsil and uvula. There was no evidence of pulmonary tuberculosis. Another case has been reported by Crossfield[7]; in this case there was primary pharyngeal as well as laryngeal tuberculosis. One case has been reported by Chappell[21]; Rethi[25] has reported a case starting from the posterior pharyngeal wall. A case of extensive ulceration of the entire palate and larynx with little lung involvement has been described by Zarniko[9]. Mention must again be made of Siegert's second case.

Other cases of pharyngeal tuberculosis have been reported by Heindl[26], Griffin[15], Bowlby[8] and Parker[22]. In Parker's case there was ulceration of the right tonsil, nasopharynx and soft palate, which developed after the removal of enlarged tonsils and adenoids. Smith[35] has seen 5 cases of tuberculous ulceration of the soft palate and adjoining soft tisssues. Catti[6] has described a pharyngolaryngeal type of acute miliary tuberculosis. In children it may be mistaken for diphtheria; it runs a very acute and rapid course.

Only two cases of pharyngeal tuberculosis have come under the writer's observation:

CASE 1.—Henry R., aged 21, native of U. S. The ulceration, when the case was first seen, involved a large portion of the posterior wall of the pharynx, uvula and tonsils, and extended into the nasopharynx. There was extensive lung involvement. The larynx was almost free from ulceration. The disease ran a rapid course, terminating fatally within six weeks after the patient came under my observation. Iodid of potash had been tried without effect.

CASE 2.—E. L., a young woman 22 years old, native of U. S. In this case the pharyngeal ulceration was very slight and started on the posterior wall. There was present a superficial ulcer half as large as a ten-cent-piece, on the posterior wall directly back of the uvula. There was also a small ulcer in the larynx in the interarytenoid space. There was dulness at the right apex, with bronchial breathing. The pulmonary and laryngeal tuberculosis was first present in this case so that the development of the disease in the pharynx could be watched from the beginning. There was first some slight redness of the mucous membrane with several small grayish nodules; these, in the course of another week or so, broke down, forming the ulcer which had all the characteristic appearances. After continued applications alternately of lactic acid and orthoform in olive-oil, the pharyngeal ulcer got entirely well. The patient is now in Denver, where she is doing very well indeed.

A bacteriologic diagnosis was made in both cases.

The ulceration in the pharynx and particularly of the tongue sometimes extends quite deeply into the muscles of these parts. This has been demonstrated by Beale[16].

If the cases above mentioned, which represent a considerable number of those reported during the past five years, are considered, it seems evident that tuberculosis of the pharynx is after all not so very rare. I quite agree with Shurley, however, that pure tuberculous conditions of the pharynx unassociated with other affections, are very rare. In fact, Shurley has made the statement, that he has not seen cases of tuberculosis of the pharynx except in mixed infection. While the diagnosis can usually be made by the appearance of the ulcers and the bacteriologic examination, in cases of mixed infection, it is at times very difficult. This is so in the cases of mixed tuberculous and syphilitic infection. It has been shown too by Naegeli[27], that localized tuberculosis may take on a carcinomatous character, the tuberculosis usually being the older process. On the other hand, tubercle bacilli may enter a carcinomatous ulcer. Loeb found in 111 cases of carcinoma, that in 31 it was combined with tuberculosis. Warthin[37] has reported a combination of sarcoma and tuberculosis occurring in a wart of the skin, has twice seen tuberculosis and carcinoma combined in the mammary gland, and in one case this combination occurred in the axillary glands.

Except in these combined cases, the differential diagnosis between pharyngeal tuberculosis and beginning carcinoma should not present any particular difficulties. The only other forms which, according to Mikulicz[38], may have diagnostic difficulties, are the severe ulcerations occurring in cases of advanced phthisis, and the very rare solitary tubercular ulcer usually situated only on the posterior pharyngeal wall. Another form of tuberculosis of the pharynx or nasopharynx, which is extremely difficult to diagnose clinically, is the tuberculous tumor. Hajek[41] has reported such a case which was at the time the first one on record. Then the type of acute miliary tuberculosis in children may present difficulties in diagnosis. A positive diagnosis of pharyngeal tuberculosis ought not to be made without a bacteriologic examination, and without first trying potassium iodid. It is really surprising how many ulcerative throat conditions, even with positive evidence of pulmonary tuberculosis, and which clinically present all the appearances of tuberculosis, get well when potassium iodid is administered. I have had a number of such cases.

Since the publication of Dieulafoy's experiments, in which he called attention to tuberculous infection of the tonsils and the lymphoid tissue of the nasopharynx, much greater interest has been taken in the subject. Dieulafoy[18] inoculated portions of extirpated tonsils into 61 guinea-pigs, 8 of which became tuberculous. Guinea-

pigs were also inoculated with adenoid tissue from 35 cases, and 7 developed tuberculous processes. He distinguishes three stages: 1. Latent tuberculosis, in which the bacillus causes a multiplication of phagocytes and enlargement of the tonsils; this process, by development of fibrous tissue in the tonsils, may not extend, but often does. 2. The submaxillary and cervical lymphatic glands are invaded, and from these there may be extension through the lymphatics, until the thoracic duct or right lymphatic duct is reached, whence the bacillus is carried to the right side of the heart. 3. From the heart the process may finally reach the lung.

Wright[24] has questioned the accuracy of Dieulafoy's experiments. His investigations, made in the same way, were entirely negative. Guinea-pigs were inoculated with tonsillar and adenoid tissue from 12 unselected cases, which had before been histologically and bacteriologically examined. The experiments of W. H. Park and those of Botey were also negative. Lermoyez and Macaigne[33] have reported a case of primary tuberculosis of the tonsils of a young girl. There was no tuberculosis of the lungs; microscopic examination of the extirpated tonsils showed separate and confluent necrotic tubercles with giant cells and some bacilli. Tusseau[10] has reported 3 cases of tuberculosis of the tonsils. Lermoyez, in 32 cases of adenoids found tuberculosis in 2. Brindel, in 64 cases, found tuberculosis 8 times in the adenoid tissue that was removed. Gottstein[40], in 33 cases, found it 4 times. Fischer and Pluder[19], in 32 cases, found tuberculosis 5 times; twenty-eight of these cases were children and 4 adolescents and adults; only 10 of the children were scrofulous; not one of them had general tuberculosis. The diagnosis was made histologically. Latent tubercles were found in the mucous membrane of the adenoids. A few bacilli were present in the diseased part, never in the epithelium nor healthy lymph follicles. Distinct caseation was found in half of the cases. Walsham[32] examined the tonsils of 34 tuberculous subjects, on all of whom autopsies were held. During life, with two exceptions, there had been no symptoms of tuberculosis of the tonsils. In 20 cases, the tonsils were found to be tuberculous. Broca, on the other hand, examined the extirpated adenoid tissue from 100 cases, without finding evidence of tuberculosis in a single case. For some time, tonsils and adenoids removed in operations in private and hospital practice have been carefully examined histologically and bacteriologically, at the Bender Laboratory, by Dr. George Blumer. Of these, 23 were cases of adenoids and 12 of enlarged tonsils. These 35 specimens were all from unselected cases, children between the ages of 4 and 15 years. In each case a careful physical examination was made of the patient, particularly for evidences of pulmonary tuberculosis. None of the 23 adenoid cases had any tuberculosis that could be detected, and 11 of the tonsil cases were also free from general tuberculosis. In nearly all of these cases, however, the cervical lymphatic glands were markedly enlarged, and a number of the children had had operations for suppurating glands in the neck. On histologic examination, none of the hypertrophied lymphoid tissue removed from the nasopharynx was found to be tuberculous, but of the 12 tonsils, two were found to be tuberculous. In one case, the tuberculosis of the tonsil was probably primary. The tonsil of the one case (Specimen 51 of the report) was from a girl 6 years old, a patient in the Child's Hospital, who had had an operation for tubercular arthritis of the knee. In the second case (Specimen 52), a girl 5 years old, there was absolutely no evidence, on careful physical examination, of tuberculosis anywhere else, so that the tuberculosis of the tonsil must be considered the primary condition.

Following is the report of the examination of the tonsils, at the Bender Hygienic Laboratory, Albany, N. Y., May 22, 1899.

Specimen 51.—The tonsillar substance is, for the most part, perfectly normal in appearance. At one or two points, however, there are areas of cells which contract very sharply with the tonsillar substance, on account of the lighter stain which they take. These areas consist of sharply circumscribed cellular nodules made up mostly of oval or irregular cells of an epithelioid type; and of small round lymphoid cells. There are also present, in some of them, large multinucleated cells, in some of which the nuclei have a peripheral arrangement. The centers of some of the nodules are entirely necrotic, taking a pink stain, containing a good many nuclear fragments, and into these necrotic areas a good many typical polymorphonuclear leucocytes have wandered. A few tubercle bacilli were found after appropriate staining.

Specimen 52.—The greater portion of the tonsil is normal, but at a number of places there can be seen, in the tonsillar substance, sharply circumscribed cellular nodules, made up, for the most part, of cells of an epithelioid type, but also containing small round lymphoid cells, and typical giant cells of the Langhan's type. The majority of these nodules are very small and show no signs of degeneration, but in one or two of the larger ones, beginning central necrosis can be made out. In this specimen also a few tubercle bacilli were found after appropriate staining. GEORGE BLUMER, Pathologist.

Not enough consideration has been given to the fact that the tonsils are of considerable etiologic importance, as perhaps *often* the primary seat of infection in general tuberculosis. As mentioned before, Dieulafoy has shown how the tuberculosis may extend from the tonsils to the lungs.

Winckler[14] found that in scrofulous eye affections, 50 per cent. had diseases of the nose or nasopharynx. He examines all eye cases for adenoids. If it is granted that scrofulous lesions are due to the development of the bacillus tuberculosis, the importance of diseased tonsils as a cause of scrofula is readily seen. It is a question whether hypertrophied tonsils and adenoids are not frequent causes of scrofula. As Baginski[36] has said, "subjects of the lymphatic constitution are only selected cases of the most outspoken form of scrofula."

The bacteria cause an increased hyperplasia of the lymphoid tissue of the nasopharynx and tonsils, and from there the scrofulous process extends by way of the lymph-channels to the glands of the neck, and to the ears and eyes. Certainly children of this lymphatic type are extremely subject to infection. This is frequently shown by their enlarged glands, and the involvement of the lymphatic structures all over the body. We have all seen how wonderfully these children improve when their diseased tonsils and the lymphoid tissue of the nasopharynx are promptly removed, provided there are no tuberculous processes in other parts of the body. If not removed early enough, they are a constant menace to the general health. I do not think there is any doubt, even though our own examinations of adenoids were negative, that if all extirpated tonsils and adenoids were subjected to a very careful histologic and bacteriologic examination, tuberculous conditions would be frequently found. That other general infections, as well, have their origin in the tonsils, has been pointed out by Jessen[34]. He has reported four cases to prove this: a case of severe general infection following disease of the tonsils, and a second case of fatal pyemia, the result of tonsillar abscess. The third case was one of pneumonia with pericarditis, pleuritis and nephritis, following

a streptococcus angina. In the fourth case there was a fatal double pneumonia with its origin in the tonsils. The author states that without a bacteriologic examination it would be natural to attribute some of these cases to influenza. He also believes that these cases are not rare; that many of the septicemias, and the streptococcus and staphylococcus pneumonias, gain entrance into the system through the tonsils. Richardiere and Hanot have reported fatal cases of lymphangitis, pleurisy and sepsis, following non-phlegmonous inflammation of the tonsils. Hodenpyl has claimed that bacteria could not enter the tonsils unless there was a "loosened" epithelium. This, however, is always the condition of the epithelium in the crypts of the tonsils. Whether the scarlatinal angina is not the point of entrance for the scarlet fever is still an open question. Abrahams, Trousseau and others, have reported cases of rheumatism following inflammation of the tonsils.

In conclusion I would express my thanks to Dr. Blumer for his valuable aid.

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DISCUSSION.

DR. ROBERT LEVY, Denver, Colo.—I regret that I was not here to hear all of the Doctor's paper, for it is one of exceeding interest to those of us living in the section of country I do, and seeing, as we do, a great many cases of tuberculosis and not a few cases of tuberculosis of the pharynx. A few years ago I reported seventeen cases of laryngo-pharyngeal tuberculosis and since then I have records of a number of additional cases. While potassium iodid often will clear up ulceration in the pharynx, those ulcerations in my experience have not been very suggestive of tuberculosis of the pharynx, neither in their own clinical appearance nor in the clinical appearance of the patient. In tuberculosis of the pharynx the general condition is usually quite distinctly tubercular. In laryngeal tuberculosis the diagnosis often is more difficult. I will not say there are not exceptions, but in a general way those cases which have cleared up under potassium iodid have given a history sufficiently suggestive to lead us up to the administration of potassium iodid with considerable certainty. As to the source and the mode of infection, in my hospital experience I was struck with the presence of acute pharyngitis in cases which afterward developed pharyngeal tuberculosis. In reading the works of a number of men as to the mode of infection I was particularly struck with the fact that frequently the infection is local and is the result of a destruction of the epithelial covering, whereby an opening is made for the entrance of the specific poison. I will not say that many cases do not occur through lymphatic infection, but I do believe that a local inflammation may exist which will assist in admitting the infection. As a rule tuberculosis of the pharynx occurs in advanced cases of pulmonary tuberculosis, and rarely is it found that tuberculosis of the pharynx occurs early in the disease.

DR. EMIL MAYER, New York City—The Chair would ask the reader of the paper to state, if he can, the final outcome of the case where he found tubercle bacilli where the disease has not been suspected. And also, I failed to notice whether he said anything at all about the diagnosis clinically between tuberculosis of the pharynx and lupus.

DR. E. FLETCHER INGALS, Chicago—I was interested especially in the views expressed in this paper as to the mode of infection of the pharynx. If the infection results from the sputum, we ought to have tuberculosis of the pharynx much more frequently than we do in tuberculosis of the lungs, therefore it seems that the infection must usually be through the blood-vessels rather than from the surface of the pharyngeal mucous membrane. A form of sore throat, known as scrofulous, that causes large and comparatively deep ulcers, sometimes occurs, in which we do not know the exact etiology. It has been thought that these cases are generally the result of an inherited mixed infection of tuberculosis and syphilis. At any rate the ulcer is likely to occur in individuals whose parents have had one or both of these diseases. These cases occur in comparatively young children; they do not present the appearance that we commonly see in tuberculosis of the pharynx, nor that of the deep ulcer of syphilis. As a rule, these ulcers have beveled edges and they are about midway in depth between the tubercular and deep syphilitic ulcers. In such cases it is difficult to determine whether there is a tubercular process or not for we are not likely to discover the tubercle bacilli, and I think they have been sufficiently studied. I have seen a few of these cases and have found that they generally yield to the treatment that I commonly employ in tertiary syphilitic ulcerations of the pharynx. This consists of the tincture of iodin in full strength, carefully applied until the surface has a dry brown glazed appearance. These applications are made daily for about ten days and then less frequently, usually for about two weeks until the ulcer is healed. At the same time the patient is given moderate doses of iodids, and nux vomica or other tonics as indicated.

DR. C. F. THEISEN, Albany, N. Y.—In reply to Dr. Mayer's query, I would say that in the cases I have seen in private practice, I was only able to make out these two positive cases of tuberculosis of the pharynx. In all the ulcerative cases the bacteriologic examination is made. In most such cases the streptococcus is found and I have no doubt it is the streptococcus that causes the rapid ulceration and destruction. But in all the other cases (except the two I reported), iodid of potassium cleared up the pharyngeal ulceration. Dr. Mayer asked about the child in which the condition was only found on histologic examination. The examination showed the necrotic tubercles with giant cells and tubercle bacilli, a typical microscopic picture of tuberculosis. It was impossible to tell whether the other case was primary or not. I did not go into the diagnosis of tuberculosis in detail, because I had to handle the subject in a short space of time. I think there is no doubt the diagnosis is easy between tuberculosis and lupus. The bacteriologic examination in these cases does not always clear up the case.

ACCESSORY THYROID TUMORS AT BASE OF TONGUE.*

REPORT OF CASES.

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Accessory thyroid tumors appearing at the root of the tongue are a rare affection. For this reason, if for no other, I desire to bring the subject before the members of the Section for discussion. Several cases coming under my observation I will report, while at the same time I shall take the opportunity to refer to others, which have already been reported. It will be interesting to note the various methods employed for the removal of these tumors.

The first case coming under my notice was that of a Mrs. J., who consulted me May 12, 1896, in reference to a growth at the base of her tongue, which she discovered six months earlier. The condition seemed to cause her more mental annoyance than physical discomfort. She was 25 years of age, and married. Her weight was 133 pounds, and height 5 ft. 6 inches. Though presenting the appearance of a good physique, she was anemic, mus-

Accessory thyroid tumor of tongue. Schadle-McBurney case.

cular tissues soft and flabby. Evidences of malnutrition and nervous exhaustion were marked. She complained of insomnia and gastric derangement. A heavily-coated tongue, loss of appetite, constipation and distressing flatulency of the bowels were pronounced symptoms. During her unmarried life she had enjoyed excellent health. Menstruation commenced normally, and no irregularity in the epochs occurred. In two years and nine months she was pregnant three times, having given birth to two children at full term and "miscarried" once, suffering much discomfort during pregnancy. Her family history was good.

On examination of the patient's throat, the growth was found to be about the size of an English walnut (Fig. 1). It was plainly visible upon forcible protrusion of the tongue, and was covered with mucous membrane which showed an intense superficial vascularity. The color was a deep, purplish-red. At times it seemed to quite fill the fauces, especially when in a state of acute hyperemia, crowding up the uvula and coming in close contact with the pillars and arch of the soft palate. After the birth of her last child menstruation appeared earlier than usual under such circumstances, but was irregular as to time and continuance of the epoch.

During the time of the apparently suppressed menstrual function, the lingual tumor would swell and become very vascular, a most peculiar phenomenon. On palpation it was found hard and immovable. Externally, underneath the lower jaw the same condition existed. No pain was present, and respiration and deglution were not interfered with. Impairment of speech was noticeable, the voice being thick and non-resonant. On laryngoscopic examination, the larynx was visible and the epiglottis seemed normal, except, perhaps, being interfered with in its movements produced by the presence of the tumor.

Being in doubt as to the nature of the tumor, and judging from its physical appearances that severe hemorrhage was sure to follow radical removal, I determined on first testing its vascularity by the introduction of an exploratory needle into the growth, which procedure was followed by considerable bleeding. After this experience I concluded the removal of a piece for microscopic purpose was not justifiable, thus preventing me from arriving at a proper diagnosis. Comparing the tumor as to appearance and vascular behavior, with what seemed to me similar growths sometimes seen in the nose and nasopharynx, I made up my mind that this was a fibroma. Feeling that removal by the use of the snare, either hot or cold, would involve considerable danger as to hemorrhage, I accordingly suggested that a conservative line be adopted and await results. With this end in view I began the use of electrolysis. The tumor, under this method of treatment, was reduced to about one-third of its original size in a period of two months, from May 11 to July 15. On the latter date the withdrawal of the needle was followed by a copious bleeding, which was brought under control by applications of Monsel's solution.

The use of electrolysis was now continued. After another week a hemorrhage, more violent than either of the others, occurred, and left the patient in a weak and anemic state. I now advised consultation, and Dr. McBurney of New York was seen. But before visiting him Drs. Ingals and Lincoln also saw the patient, the former in a measure confirming my opinion, while the latter had no opinion to offer.*

Dr. McBurney's letter under date of Oct. 25, 1896, in answer to my note of introduction, reads as follows:

"Mrs. J., whom you kindly referred to me, has called on me twice, and I have carefully examined her. Her tumor is a rare one, and I have only twice before seen its counterpart. I regard it as a myxoma, or adenomyxoma. Its true seat is in the substance of the tongue, the portion that can be seen on the dorsum being only about one-third of the whole mass. There is only one method by which it can be safely and entirely removed, and this one I have no hesitation in recommending, a straight incision should be made in the median line, beginning a little below the symphysis menti and extending to the hyoid bone—as this incision is deepened and the edges separated, the surface of the tumor nearest the skin can be easily uncovered and the whole tumor dissected out. The muscular fibers of the tongue are pushed

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* Since this paper was read Dr. Lincoln informs me that he viewed the growth as a tumor of the fibroid type.

to either side and the tumor enucleated with little or no injury to the tongue. This operation is safe and certain, and no danger from hemorrhage will arise. Every vessel would be tied as soon as cut."

The operation was performed by Dr. McBurney in accordance with the above description. Considerable loss of blood attended the removal of the tumor, which rendered the operation tedious and difficult. The patient made a good recovery, and has been well ever since.

The growth was microscopically examined by one of the pathologists connected with the Vanderbilt Clinic, who reported it to be a gland of the thyroid—ductless—type.

Dr. J. L. Rothrock of St. Paul also made a microscopic examination of a section of the growth which I gave him, and the following is his report:

"Microscopic examination of the section submitted to me shows it to consist histologically of structure identical with the thyroid gland. From the location from which this tumor is removed there is no doubt that you are dealing with an accessory thyroid gland."

I wish also to report the case of a young woman, aged 23 years, patient of Dr. A. C. Heath, who came under my observation during the past year. A growth appeared in her throat at least ten years ago, as the patient thought. Inspection of the pharynx revealed a tumor slightly larger than a hen's egg situated on the base of the tongue just anterior to the epiglottis. This tumor was smooth, dense, of a dusky-red color, with a characteristic resilient feel and appeared perfectly homogeneous. It filled the mouth so that it was impossible to get a view of the larynx or even the epiglottis. Her voice had entirely lost its resonance; it was dead and muffled. She had some difficulty in swallowing, and a shallow, resistant cough. This case was watched for four weeks, and surgical procedure advised. Unfortunately, however, she would not submit to an operation, thus preventing the verification of the diagnosis. But from its various characteristics the growth seemed very similar to the above case, and would justify the diagnosis of accessory thyroid situated at the base of the tongue.

On searching for literature on the subject of thyroid tumors at the base of the tongue, I found that Dr. J. Collins Warren of Boston reported a case[1]. The following is a synopsis of his report, the patient being sent to him by Dr. F. I. Knight:

On examination of the throat a tumor presented at the base of the tongue about the size of a hen's egg. The laryngoscope showed that it was not connected with the epiglottis. It seemed to be covered with normal mucous membrane, and a tortuous vessel of considerable size could be seen running over the anterior surface. The patient was a woman over 52 years of age, who had always enjoyed good health, is at present strong and stout, mother of three healthy children, but her parents both died of consumption. She first noticed a lump in her throat about twenty-two years ago. Since that time it has been slowly but steadily increasing in size. The catamenia ceased about five years ago, but no special change in the tumor occurred. The removal was accomplished May 4, 1892. After etherization, a ligature was passed through the tip of the tongue, and two additional ones through the dorsum of the tongue on either side of the tumor in the region of the papillæ circumvallatæ. Traction brought the whole tongue forward, so that the tumor presented between the incisor teeth, then an incision was made on the median line of the tumor, which was enucleated. It appeared to be situated just beneath the mucous membrane, and it did not involve the substance of the tongue. Three vessels required ligature. The patient made an uninterrupted recovery, and two weeks later returned to her home. Three months after the operation there was no sign of return of the tumor. Microscopically (Dr. Whitney), the structure was that of a ductless gland with colloid degeneration, and in all its essential histologic details corresponded to the thyroid. In the *British Medical Journal*, Dec. 1, 1894, appears the following report of a case admitted to the Golden Square Throat Hospital:

A. D., a girl 17 years of age, complained of a lump at the back of the tongue. It was giving no trouble, and had only been discovered two months previously, when her singing master examined her throat and noticed the lump there. Her speech was somewhat thick. She was an undersized but well-nourished girl. Situated at the base of the tongue, close to the position of the foramen cecum, was a tumor about the size of a small walnut. The larger half of it was to the right side. It felt semi-elastic, and was immovable on the deep tissues of the tongue. It pressed backward on the epiglottis, and when the tongue was pulled out it almost touched the base of the uvula and the soft palate. The thyroid was normal. Under chloroform, Dr. Bond cut the mucous membrane round about it with a pair of curved scissors. The tumor was fixed with a pair of tenaculum forceps and removed with the aid of a raspatory and a Mackenzie's polypus snare. Bleeding was profuse, but was controlled by pressure on the base with a finger around which a piece of lint steeped in turpentin was wrapped, while the girl was turned almost on her face to allow the blood to run out of her mouth. There was no recurrence of hemorrhage, and the patient made an uninterrupted recovery, the wound being healed in ten days. Microscopic examinations showed the tumor to present the ordinary appearances of thyroid gland structure.

In the Transactions of the Clinical Society (Vol. xxiii, 1890), Butlin reports eight cases. The history of two of these cases is thus briefly stated:

The first occurred in a female 32 years of age, and was thought to be about the size of a hen's egg. Tracheotomy was performed, and the tumor was removed through the mouth by an incision on the median line and scooping out the soft mass. There was a recurrence, but the tumor remained much smaller in size. The second case was also a female, 23 years of age. The tumor, which had existed two years, and was smaller than the former, was removed by the galvanocautery loop.

The question arises: Why should thyroid tumors make their appearance at the base of the tongue? The occurrence doubtless is due to a congenital defect or a lack of closure of the thyreoglossal duct as development goes on. On this point Sutton, in an abridged form, makes the following remarks:

Tumors which structurally resemble the thyroid gland are not infrequently met with in this region. They originate in connection with the lingual duct, a structure of embryonic significance. In the embryo a diverticulum takes place from the anterior wall of the pharynx, forming what is known as the thyreoglossal duct, and about this the thyroid gland is developed. This duct opens at the base of the tongue at a spot represented in the adult by the foramen cecum, and, passing downward, bifurcates to form the isthmus of the thyroid, the branches uniting with the embryonic gland structure to form the lateral lobes. As development goes on the hyoid bone is formed, and in its growth divides the duct

[1] American Jour. Med. Sci., October, 1892.

into an upper (lingual) and a lower (thyroid) portion. Both of these are obliterated, as a rule, when development is complete; but sometimes, in the newly-born child, a fine probe or bristle can be passed for a short distance along the lingual part from the foramen cecum, between the geniohyoglossi muscles to the body of the hyoid bone, where it is continuous with a fibrous cord passing in front of it over the thyroid membrane, and down toward the thyroid isthmus. Occasionally either of the two portions persists—closed at both ends—and gives rise to a dermoid cyst. It is in connection with this lingual portion of the thyreoglossal duct that a tumor such as above noted is developed.

DISCUSSION.

DR. EMIL MAYER, New York City—The Chair would like to report briefly a case that came under his observation some time ago, in which he was quite confident that there was a thyroid tumor at the base of the tongue. At the base of the tongue there was a large tumor pointing toward the epiglottis, so that the individual had suffocative attacks and for some time did not dare to go to bed. When I saw the patient I found him to be a stout man, and only with the greatest difficulty was I able to get a view of the larynx and the posterior portion of his tongue. The growth was fully an inch long at that time. I felt confident we would have some trouble, because of the suffocative attacks, but I advised the attending physician to give the patient potassium iodid in large doses. Some weeks afterward the patient returned, claiming that he was in much better condition. The growth was evidently a specific tumor of the base of the tongue, which is a very rare condition. Later I saw his physician, who had treated him some years ago for syphilitic iritis. Although he has no specific history he has two of the most pronounced tertiary syphilitic lesions.

DR. C. R. HOLMES, Cincinnati, Ohio—I have at present a case under observation, which I mention more for information than for any other reason. The patient is a young married woman, the mother of several children, who came to me about three months ago with a tumor about as large as a hen's egg attached almost throughout to the base of the tongue and extending up almost to the apex of the left tonsil. In fact, it was impossible to say where the left tonsil began and the tumor ended. The tumor was of a dark purple color, smooth and soft to touch. It was impossible to make a rhinoscopic examination, for there was only a small passage on the right side, and yet the tumor was so elastic that the patient had no trouble eating or drinking. The tumor caused only a change in the sound of the voice. I called in Dr. Thorner, who also gave as his opinion that it was an angiosareoma. On attempting aspiration, the moment the needle was passed, there was a spurt of blood that squirted through the open mouth and stained my operating gown. I determined on the use of the cautery. A surgeon was called, and he thought it best to ligate both common carotids and go in and cut the tumor out. But as I was not yet willing to place the patient in that condition, I used the galvanocautery. There is now only a small mass left at the base of the tongue. A microscopist reported sarcoma, but I have had cases that did not turn out to be what the microscopist reported. However, in this case the evidence seemed to point in that direction. In connection with the paper by Dr. Schadle, it is of much interest to me now, because he speaks of one tumor that was about that color and resilient and vascular, and I would like to know whether he thinks from his experience that a tumor such as I have described would be likely to be a sarcoma or one of the tumors such as he has reported. I communicated with a doctor in Philadelphia who used electricity very much, and he advised using an anesthetic and a current of 400 miliampères, and having oxygen and everything ready, because the approximation of the phrenic nerve might stop the respiration and action of the heart. I have not tried that except under cocain, and I found the patient could take only a much weaker current.

DR. J. SCHADLE, St. Paul, Minn., in closing—I will only say that from his description I believe the case reported by Dr. Holmes was similar in character to the one I related.

CRIMINAL MORPHOMANIA.*

BY T. D. CROTHERS, M.D.
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The physiologic action of opium and its alkaloids, with symptomatologies, is becoming more familiar with the increasing frequency of cases and studies of many persons. As in other fields of research, there are vast stretches of unknown lands awaiting discovery, and many new facts in the etiology, progress and treatment to be seen and described. My purpose is to point out a new phase in the symptomatology, and describe a condition which has been noticed, but not defined or studied before. I shall use the term "palsy of the higher psychic centers" to describe in part this condition. The former personality of the person is lost, and he acts from a different point of view; his conduct and thoughts vary widely from former conditions, and he seems to have new purposes and changing motives, foreign to any previous life. These strange inconsistencies of conduct and thought come into legal notice, in the question of responsibility in crime. The apparent cunning, honesty and reasoning are so unusual and foreign to all theories of mental failures that the expert is unable to detect any defined insanity, and yet, he can not doubt that some concondition of brain disturbance is present.

One case was that of a woman who, after using morphin, went about the house secreting things of value and locking doors and windows, putting away matches, fearing robbers and fire. This was a clear, defined period of several hours, during which she appeared almost rational, and talked clearly of other matters, as well as the danger from these sources. Then she relapsed into her former indifference.

A still more prominent case was that of a noted banker retired from business, who became a morphin taker, following the constant use of spirits. He never appeared to be other than sane and clear on all matters. Occasionally he was stupid at night, at home, but always appeared well in public. Finally, he was detected setting fire to a building. He was found to have been the author of numerous fires in the villages about. He would go to a town and rise in the middle of the night, start a fire in some old building, return to his bed, and so secretly as to disarm all suspicion. He was caught in the act and stoutly denied it, explaining his presence in the most plausible way. The result of investigation showed that after using four or five grains of morphin, he would become very secretive and go about in a stealthy manner, but never at a loss to explain his conduct, or appear other than natural to others. He would show unusual cunning and frankness if found in some suspicious place, and yet without doubt set fire to old buildings, such as barns and outhouses with every opportunity. A number of experts could not find signs of insanity, and yet when the morphin was withdrawn there were many symptoms of dementia and mental instability. The morphin roused up another personality, giving clearness and power to his brain and breaking up all sense of right and wrong. When under these pyromaniacal impulses he acted with unusual cunning and judgment, and seemed to reason that it was clearly his duty to do so. When away from the morphia he had a confused notion of his conduct, and was filled with

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remorse at the changed conditions of his life. When under the influence of morphia a new personality of expansive character, came on. He seemed to have a desire to destroy and burn down old unsightly buildings.

A patient under my care for excesses in spirits, suddenly became a speculator, buying stocks on a margin. Fortunately his resources were limited, but the mania continued in lottery tickets and bucket-shop ventures. This was foreign to his past conduct and character, and was unexplainable until his secret morphia addiction was discovered. He left, and two years after began a career of cunning, sharp, dishonest speculations, and was arrested. On trial the resumption of the morphia addiction was shown, but the mental power and skill displayed indicated such unusual ability that he was convicted. I saw him in jail later, when the morphia had been taken away, and the evident unsoundness of his mind could not be mistaken.

A third case came under my notice as an expert. A graduate and prizeman of a college, who married wealth and spent two years traveling, suddenly left his home and began a career as a confidence man and forger. He traveled around under assumed names, passed bogus notes, raised checks, and when caught gave such clear explanations as to disarm all suspicion. Finally he was arrested and held for trial. As long as he could procure morphia he was calm, clear, adroit and possessed of unusual brain power, but after his sentence and removal to prison he became a partial dement and was very feeble mentally. In this case the morphia developed a new personality. He acted and talked as if he believed most firmly the honesty of his acts, and never doubted his ability to deceive and falsify, acting as if he was thoroughly in earnest. When confronted with his deception he did not recognize it, but showed the greatest skill to justify and explain it, never displaying any visible consciousness of the dual life, but always appearing honest and frank to an extreme degree. He passed a forged note, went out on a back street, changed his dress, put on false whiskers and came back on the street, walking about with extreme coolness. He went into a store, bought some morphia, and then purchased a pair of shoes, giving a forged note as before. A detective who had followed him closely, arrested him, and after a short examination before the chief of police he was discharged. His earnest, frank manner convinced them that he was not the man. The next week, in a neighboring city, he did the same thing, was arrested and discharged as innocent. Finally, a detective followed him, and found that he was constantly changing his dress, and assuming different disguises, buying clothes and other things which were finally pawned, giving checks, some good, others bad, and making deposits at banks and drawing them out. During this time he bought morphia freely, but never seemed other than calm and sane. He was finally arrested, and after serving a short sentence disappeared. While using morphia he appeared very frank and honest in his manner and conduct, especially in public and in conversation with others. He carried cards and bill-heads of different well-known firms far away and represented different members of these firms or traveling men connected with them. He always carried an overcoat and means for suddenly changing his appearance. While under the influence of morphia he appeared to be possessed of unusual clearness and cunning, with a most contagious frankness and honesty. There seemed to be no consciousness of the duplicity in his talk or conduct. When the morphia was taken away the very opposite appeared. He was remorseful and depressed, timid and shrinking, displaying his motives and thoughts in a most marked way.

Another case reported to me was of equal interest. A series of very remarkable swindling operations had been carried on the Hudson River and Long Island Sound night boats. The detectives were unable to fasten the crime on any one, until finally, a young man of refined, delicate appearance, was arrested for passing a forged check. It was ascertained that he was the probable author of all the swindling for the past two years. He was a morphinist and had an income from an annuity. He spent his time traveling around, appearing to be a clergyman, an actor and a business man, and talked freely with every one, inquiring very minutely into the personal history of persons and offices. He would secure advances on brass watches, bogus diamonds, and pass worthless checks and railroad tickets; solicit loans and give in security worthless bonds and stocks, buy goods, giving bogus checks and receiving money in return, show bank deposit books of large sums, and leave them as security. He would make the acquaintance of some rich man, and after swindling him, disappear with some frivolous excuse. He changed his appearance frequently, wearing spectacles, false whiskers and wigs, appearing as a large fleshy man, then wearing half military suits, and so on. His wardrobe was composed of a great variety of theatrical suits, and he claimed to be an actor. In jail he was identified by many persons as assuming different disguises and defrauding them in various ways. As long as he could procure morphia, he was genial, self-reliant, open, honest, and very frank. He never appeared to be deceitful, and always acted and talked as if he believed everything he said and did. The most careful questioning and efforts to have him explain his conduct left a strong impression of his honesty, although it did not explain his life and conduct. The detectives called him an honest rogue while using morphia. His manner on the witness stand was so frank and clear that the mystery of his conduct deepened and the jury was half inclined to think that some mistake had been made. He was sent to prison and the morphia removed, and all his manner changed. His frank, honest, clear thought and talk disappeared and the fawning, lying hypocrite appeared with all the criminal instincts. He is still in prison, and is regarded with much suspicion by the keepers.

While these may be considered extreme cases, they are types of an unknown state, following the use of morphia. I find from inquiry that morphia criminals are regarded as the most dangerous by police authorities. They have full control of their nerves at times and can act a double part so clearly as to disarm suspicion. Such cases are bold, defiant, and adroit, and possess a rare power of deception entirely foreign to other criminals. This is sustained in the ordinary medical treatment of such cases. The cunning deception and the unconscious reasoning and concealment of their plans and motives, seemed to point to some local palsies of certain brain functions. Where a patient is suffering from withdrawal symptoms, and suddenly becomes cheerful, and quiet, and is loud in his protests against the suspicion of having used any morphia, some condition of psychic palsy exists. Innumerable instances of the most cunning intrigue and seductive falsehoods are common in such cases. They act and talk with the certainty of truthfulness, and seem unconscious of the deceptions they practice.

One such case was detected by examination of the urine, finding morphin reaction. For a long time it

was impossible to detect where and how the drug had been procured. The woman's earnest, emphatic denials were clearly impossible to a normal mind, and showed some obscure palsy of the higher centers. Yet during this period she went about in her usual way. She was a most earnest, praying Christian, whose high ideals of truth and honesty were beyond question or suspicion. This case aroused some bitterness among her friends. Her husband and family could not believe that it was deception, and when the morphia reaction was shown, thought it a fraud. She finally went to a secluded place in the country and after a time the morphia reaction symptoms appeared. Then all her former self-possession and boldness disappeared. She became very penitent and was a different person in every way. The mystery of this deception was called by the clergyman, "A possession of the Devil." It was a trance state, literally, in which reasoning and consciousness of her relation to others was suspended. Her mind was concentrated on procuring morphia and concealing it from others. This dominated every other consideration and was probably a sacred duty to be carried out above every other thing.

In the history of the two swindlers, the morphia roused a mania for deception and double life. The gain which they procured was of minor consideration, but the greatest pleasure was in taking advantage of the credulity of others. In one case the confusion and mystery which followed the deception seemed to be the most enjoyable part. They would stand around and talk about the act and show sympathy with the sufferers. In another case after changing his dress, and appearance, the morphinist would appear and show great interest about the act. I can not find from inquiry any cases where capital crime was committed in this morphin state. Thefts, swindling, and general falsehoods, with concealment of motives and conduct, seem to be the most common.

I have met with two cases where a will mania followed. Both the persons, men of some property, made from seven to eight wills a year for several years. These were concealed, and on the death of one this was brought to light. The other recovered and ordered them all destroyed.

The cunning, skill and ability shown in the deception must apparently be based on the dominance of the idea as true and real. No shadow of the real condition or the danger of exposure was apparent. Each case acted only as persons do who are fully possessed with the honesty and reality of their notions. A noted physician under my care displayed extraordinary deception to conceal his real condition and was fully unconscious of his acts or the consequences. Even when he was convicted of his deception, he seemed roused to greater efforts for concealment. No reasoning or counsel could displace the mania for deception. On other matters he was in no wise disturbed mentally—reasoning and acting with excellent sense and judgment. He could discern motives and deceptions in others, but was unable to realize his own condition. When morphia was removed this changed, and he realized and acted differently.

In another case, a man of noted honesty and strong character denied all use of morphia and when a quantity was found on him he persisted in explaining it in the most adroit way. He seemed actually to believe his own statements and could not be convinced otherwise. The foolish deceptions of alcoholists are quite different. They display a consciousness of their real condition and the concealment they are practicing. All morphinists do not exhibit these special phases, like alcoholists. They are weak and childish in deception and show by their conduct a consciousness of their real condition and the efforts to cover it up. But these cases differ in thought and act, appearing to be thoroughly impressed with the idea of the correctness of the act and unconsciousness of the deception and danger of exposure, at the same time using wise precautions to make the act appear real. Two of these cases seemed to realize the danger of exposure in the unusual precaution to make their conduct appear honest. With this was a perfect self-possession and command of themselves. It was noticed that they took morphia frequently in small doses. When the amount taken was followed by the symptoms of narcotism they disappeared, and remained in bed until the effects wore away. This state has been noted in long intervals in other, less prominent cases. A physician displayed great harshness to his patients and family at times, then he would recognize it and be very penitent for his conduct. On one occasion he drove his wife away from the house, and two hours later went after her, showing great tenderness. This was not a so-called mania seen in alcoholics, but a calm, reasoning, morbid impulse, carried out deliberately and with every appearance of sanity.

In a case in which I was called in consultation, a delusion of sudden death appeared at stated intervals. The patient demanded most unusual preparations for a death-bed scene. Clergymen were called, and a large family gathered to witness his exit. Finally a slight interval of sleep would bring a change and a desire to live again. This was not a hysterical and emotional state, but a calm, reasoning, hopeful interval of several hours. He gave no signs of mental disturbance nor seemed unreasonable in his thoughts or conduct. He was known as a moderate user of morphin, and was never seen stupified by its results. He was under treatment for its removal by the family physician, and was secretly using it when these trance periods arrived. He had only a faint recollection of these events after, and attempted foolish explanations, showing he did not realize his condition.

In another case, after using a certain amount of morphia, a quiet, unassuming dentist became a strong religionist. He would march with the Salvation Army and make eloquent prayers and exhortations. This would last for several days, then he would relapse to his former quiet life. In this religious period no signs of mental failure or weakness appear. He seems every way clear, sensible, and earnest, and explains his change of conduct in the most plausible way. These cases illustrate the mental state which I wish to make prominent, and which I believe occurs more frequently among neurotics of the higher classes—persons with culture, and more than usual mental development. They are called by detectives "dangerous first-class criminals," where detection only follows the limitation or withdrawal of morphia. The confinement of such a person for a few days, with removal of all opportunity for procuring drugs, reveals their real condition. This condition resembles reasoning mania, only the usual signs of mental defects are wanting. There is mental calmness and self-possession, and the brain operations seem clear and rational. The strange acts and conduct are explained with a conscious honesty that is convincing. It would seem that a new personality is involved, and that new ideas or motives take full possession of the mind, and all other conditions and surroundings are ignored. Yet, with this appears the unusual cunning to make the act a success.

In a recent murder trial, a morphinist who had evidently been associated with the crime in some indirect way displayed masterly ability in the explanation of his

conduct. He shed tears and created a strong feeling that he was the victim of deception by others. After the trial, the facts of his complicity came out, but he continued indifferent. He, no doubt, actually believed his own statements, and used cunning measures to make them appear true. A man under observation has on several occasions sent startling telephone news which was false. He has defended his acts with unusual plausibility and his associates believe him. He is an editor of ability, and a user of morphia. The same apparent notion of enjoyment in the emotion produced by such news was possible. He talked of this false news, and seemed as startled as others at the time. He is under medical care, although working at home daily.

There are no theories to explain this condition other than some obscure palsy of certain brain-centers, which breaks up the consciousness of right and wrong, or suspends reasoning on the nature and consequences of acts. It may be a state of local poisoning which centers in some psychic function, giving prominence to some idea and defending and explaining it with all the force of a normal brain. The usual efforts to explain and defend acts committed when under the influence of alcohol and opium are so obscure as to carry their own refutation. The morphinist in this state, as long as he can secure a sufficient amount of the drug, makes few mistakes and shows no weakness in making his position and conduct clear and sensible. There may be many inconsistencies and acts not common to the average man, but he has no difficulty in explaining them to his apparent satisfaction.

The clinical fact that I wish to make prominent is that in certain conditions of morphin addiction a new personality appears—some psychic trance state, in which great mental clearness, self-possession and cunning, with unusual frankness and candor, are the prominent symptoms.

Criminal acts and purposeless deceptions are common. Forgery, swindling and manias for certain acts, and adroit concealment of them have appeared so far. In the court cases no study has been made; the only recognition is that they are most dangerous criminals because of their superior capacity to lie, steal and cheat, because they appear to be honest and have no conception of the nature of their acts. In the medical cases no one has studied this symptom of deception. It is even doubted by some persons whose experience should have taught them differently. It is a distinct pathologic condition, which may be understood, and is the most significant of the brain defects and degeneration. It is only a step from childish falsifying to criminal acts, and on to more serious symptoms.

Morphin may be said to cultivate the crime instinct; at all events, it prepares the way to certain criminal acts, which often have some previous predisposition. The perversion and damage to the higher centers which govern the ethical relations of life are always associated with morphinists. The criminal side of these cases is the psychic wreckage of the criminal relations of the higher operations of the brain. The criminal who is a morphin taker is such a wreck. No exhibition of mental power and acuteness in such cases is evidence of sanity.

Again I wish to emphasize the need of exact study of these cases, of the delusions, of the manias, of the strange symptoms of strength, cunning and weakness, and indicate the possibility of medical means for relief. The criminal side of morphin cases is practically a sealed book, awaiting psychologic research and study, and promising a new field of the most practical facts.

RATIONAL TREATMENT OF CHRONIC MORPHINISM.*

BY AUSTIN J. PRESSEY, M.D.

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I submit for your consideration a method for the treatment of chronic morphinism which has been, in my hands, very satisfactory, both to myself and patients. The principal advantage to be derived from this method of slow reduction is the lessened amount of discomfort to the patient. Usually there is no pain or diarrhea, no vomiting, no profuse perspiration, no extreme nervousness, and never anything like a state of collapse; in fact, there are none of the severe symptoms, such as described by those who have written on the subject of chronic morphinism.

It is a most barbarous thing to suddenly withdraw the morphin, as in the method described by Levenstein, and now called the Levenstein method. A patient with knowledge of the symptoms which follow the sudden withdrawal of morphin who would then have the fortitude to place himself under that form of treatment, certainly must have the courage to face any event that one is liable to meet with in this life. The modifications, as described and practiced by others who have withdrawn the morphin more gradually, but yet have minimized the dose in advance of restoration of the nervous system, seem almost equally severe.

Erlenmeyer says that the sum of the suffering from the gradual reduction more than equals the suffering of the sudden withdrawal. While, perhaps, this is true with a fixed rule for reducing the quantity of morphin so much for each twenty-four hours, or if the reduction is conducted on any plan that reduces the dose before the patient is prepared for the reduction, it is not true if the reduction of the amount of morphin is made only as the condition of the patient is so improved that his necessity for the drug is lessened to the extent of the reduction made.

I always endeavor, and in 90 per cent. of the cases I am successful in so far restoring the nervous system to its normal condition in advance of withdrawing the morphin that the amount withdrawn is not discovered by the patient. I never withdrew the last fraction of a grain until the quantity used is so small that the patient is unable to tell the day he took his last dose. It is easily understood that the nervous system is in a most unfavorable condition for recuperation while the patient is suffering for want of morphin. He can neither eat nor sleep. He can not rest easy in any place or position. The effect of any drug that may be given him as a substitute, or to quiet him while withdrawing the morphin, is equally as bad and may be worse than that of morphin itself.

Nearly every patient, when he presents himself for treatment, is taking more morphin than he requires to make him comfortable. Some take two, three, or four times as much as needed. This surplus can at once be withdrawn and the patient feel and be the better for it. When the largest amount has been withdrawn that can be and still leave the patient quite comfortable, then the reduction must cease until the system has had time to adjust itself to this new condition of things. With this lessened amount of morphin the secretions become more active. The appetite improves; sleep, while not so profound, is yet more refreshing; in fact, every function of the body approximates a more normal con-

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dition, except it be the heart. The heart, which has for perhaps many years been constantly stimulated by the use of morphin, now becomes weak and fast or irregular. However, this symptom will soon pass away under the influence of small doses of strychnin or hydrastin. In a few days the system will have so far accommodated itself to the lessened amount that another very small reduction can be made. This and all future reductions should be so small that the patient is unable to tell when they are made.

The first point that I wish to emphasize—the real key to success—is to keep the patient on just as small a quantity as is compatible with comparative comfort, and yet not to get his dose so small that he will be in misery before the next regular hour for morphin. A patient should feel almost perfectly comfortable, so far as morphin is concerned, for three or four hours after getting his dose. I give the morphin four times a day, at 7 a. m., 12 m., 5 p. m. and 9 p. m. I divide the time in this particular manner for the sake of giving the morphin just previous to meals and bedtime. Patients will eat and sleep much better thereby. It is useless to ask a patient to take nourishment when he is needing morphin, and no one thing is more essential to an easy and rapid recovery than a good appetite. There are no drugs that can compare with plenty of good food and sleep to restore the nervous system, and the patient can neither partake of the one nor secure the other when too much of his accustomed amount of morphin has been withheld.

Erlenmeyer condemns the gradual reduction severely. However, it is evident from his description of the symptoms that, while the reduction extends over three, four or more weeks, the reductions have been made in advance of recuperation. He says that during reduction patients cannot recuperate, and convalescence is very tedious. This certainly has not been my experience. I have recently discharged two patients, one of whom was taking eight to ten grains of morphin a day when he came to me, and weighed one hundred and twenty-seven pounds. He was under treatment two and one-half months. On the day he took his last dose of morphin he weighed one hundred and forty-nine pounds. He remained with me two weeks after the morphin was entirely discontinued and at the end of that time weighed one hundred and fifty-four pounds—a total gain of twenty-seven pounds, and he never felt better in his life. The other was a man 51 years of age, who had taken morphin for fifteen years, and for a number of years had taken as much as twenty-five or thirty grains per day. There was only one night during his treatment that he did not sleep well. He ate well after the first week's treatment. He was with me four months and had increased in weight twenty-four pounds.

These are exceptional cases, but the majority will improve more or less in weight during the stage of withdrawal, and four out of five patients say that they feel better during the treatment than while taking morphin *ad libitum*.

Perhaps there is no way in which I can better illustrate the method than by giving a condensed report of a case. Mr. T. B., aged 26 years, married, general health fairly good, bowels badly constipated and appetite poor, had used opiates six years. The first three years he smoked opium; the last three he had used morphin, and was using from twenty to thirty grains per day hypodermically when he came to me for treatment. I ordered

R. Strychnin	gr. ¼	016
Hydrastin, hydrochlor	gr. vi	39
Spartein sulph	gr. iii	195
Atropin sulph	gr. 1/6	01
Aqua	ʒ i 31	10

M. Sig. Twenty minims hypodermically four times a day at the same time morphin was given.

I also prepared a solution of morphin containing thirty-two grains to the ounce, or one grain in fifteen minims, of this solution I gave him thirty minims, or two grains four times a day. Finding that he was very comfortable on this amount, I quite rapidly reduced the quantity of morphin until, twelve days after commencing treatment, he was taking fifteen drops at a time, or one grain four times a day. Seventeen days later he was taking ten drops or two-thirds of a grain. Up to this time I had reduced the amount of the solution given, one drop at a time whenever a reduction was made, but to reduce one drop now would mean one-tenth of the whole, and he would feel quite perceptibly the loss of that proportion, so I prepared another solution of one-half the quantity of morphin—one grain to thirty minims—and gave him nineteen minims, nearly twice the quantity of the solution. I then very gradually reduced this quantity one minim at a time, and only as that could be done without his knowledge, for no progress can be made while he is suffering for the want of morphin. March 1 he was taking four minims, when the morphin solution was again reduced to one grain to sixty minims, and of this seven minims given at a time. Again the quantity was reduced as before until March 14 when he was taking three minims at a time. A solution was then made containing one grain to 120 of water, and five minims given. The quantity was then reduced to three minims on March 17, when a solution containing one grain to two hundred and forty of water was made and five minims given; and reduced to three minims on March 20. At this time a solution of one grain to the ounce was made, and on March 25 he was taking four minims or 1/120 grain. This was the last day that he took any morphin, three months from the day that he came for treatment. His improvement in flesh and appearance was constant while being treated. He was uncomfortable only a few times during the entire period; at such times I always gave him enough extra morphin to relieve him.

This I consider an important factor. The physician must have the confidence of his patient. Unless the patient can feel sure that he can get morphin when he asks for it, he is sure to imagine that he is badly in need of it much of the time, when otherwise he will feel fairly comfortable until the regular hour for taking it. Many times a patient imagines that he requires morphin when a syringe of water will do as well. One has to study each case and be constantly on guard that he does not give morphin when water would do as well. Some patients are continually asking for extra hypodermics, and water will satisfy perfectly.

One who treats morphin has no time for other practice. He must devote his entire time to his patients. I never leave my patients with a nurse for a few hours that some or all of them do not require more morphin than they would if I were with them. On the other hand, be as careful as possible not to make mistakes and give water when morphin is required. The patient gets nervous, becomes irritable, does not eat and loses sleep unless the error is rectified in time. There is no disease with which I am acquainted that requires the constant study and watchfulness that morphinism does. Patients can seldom be treated successfully at their homes; gen-

eral hospitals or sanitariums, for obvious reasons, are not good places to treat this class of patients. The most suitable place to care for them is in institutions devoted exclusively to that class of work, where physicians and attendants can constantly have an eye on each patient in the institution. So far as medicine is concerned, no fixed formulæ can be given, every case is a law unto itself and must be treated according to its particular condition and requirements. The one thing that is to be done in every case is to build the patient up physically, improve the general health just as much as possible. Give general tonics, heart tonics, nerve tonics, according to indications. Keep all the secretions in a condition as nearly normal as possible, and look well after the condition of the stomach. When the quantity of morphin has been reduced to a very small amount, or, in some cases after it has been entirely discontinued, the patient will have a better appetite than digestion. A little care should then be exercised that easily digested food is used.

Baths and massage are beneficial in many cases. Often a hot bath at bedtime will secure a good night's sleep. In others dry heat will be more successful. The more exercise one takes, the more morphin he will require, therefore, where it is desirable to get rid of the morphin as soon as possible, the patient should take little or no exercise. In the treatment of about two hundred cases upon the above plan, my experience has been that in direct proportion to the success that I have had in recuperation *previous* to the reduction of morphin, has been the lessened amount of discomfort to the patient, and in the cases, only, that have shown little tendency to recuperation in spite of all efforts has there been sufficient discomfort to be worth mentioning.

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PERSISTENT PYORRHEA.*

SOME POINTS ON ITS ETIOLOGY, PATHOLOGY AND TREATMENT.

BY GEO. T. CARPENTER, M.D., D.D.S.
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It is not my intention to give a new name to the so-called pyorrhea alveolaris, but to call attention to that class of so-called incurable cases of pyorrhea in which, after all efforts at treatment on the part of both practitioner and patient, pus continues to ooze from the pocket. I do not wish to be understood as including in this class the teeth that are ready for the forceps, having lost two-thirds or more of their natural support, but teeth that in the judgment of the operator should be saved, yet do not yield to his attempts to eradicate the disease.

The one word that covers more than any other in the handling of pyorrhea is thoroughness; thoroughness in diagnosis, thoroughness in mechanical and surgical procedures, and thoroughness in all subsequent treatment. It is very generally known and accepted by most practitioners that the extraction of any tooth affected by pyorrhea will in time result in a permanent cure of the disease. It has also been repeatedly demonstrated that, in the majority of cases where pyorrhetic teeth have been extracted and thoroughly cleansed of deposits, and the roots trimmed, removing all roughened parts, also pulp removed and canals filled and then replanted, such teeth grow firm, and pus and pockets are not present. There must be some good reason for this changed condition, and I am convinced that this change is brought about by removing the exciting or irritating cause. I do not wish to be understood as not believing in constitutional predispositions to pyorrhea. I do believe that cachexia, in some cases, will render pyorrhea incurable through malnutrition. But even in this class of cases we must not lose hope. Do something, and do it with thoroughness; break up the sameness of life; change the conditions. Tonics and alteratives are valuable, especially rest, sunshine and fresh air; also constitutional treatment for syphilitic or other taints may prove very beneficial. But the exciting causes are by far the most common and will be the principal theme of this paper.

There are three points in the irritating or exciting causes of persistent pyorrhea to which I wish to call attention: 1. The failure to reach, recognize and remove deposits. 2. Infection, indefinitely continued from septic pulp. 3. Decalcification or molecular change in cementum and dentine.

The causes of failure in removing deposits are twofold: 1, a failure to locate the deposits; and 2, a failure to reach the deposit with any set of instruments now on the market. In pyorrhea cases, that have received previous treatment, and where pus is still found present, we should make a careful differential diagnosis between deposits, pulp infection, and roughened spiculi. To aid in this work I use a 5 to 10 per cent. aqueous solution of cocain on cotton, pack it firmly into the pocket and allow it to remain for fifteen or twenty minutes, then protect the parts with a napkin, dry the surroundings and carefully remove the cotton, holding the mouth mirror in position so as to see all parts of the pocket the instant the cotton is removed. In cases where a better view is required pack with antiseptic gauze, and allow it to remain two or three days. If deposits are seen remove them if you can.

To insure success in removing deposits I use a pyorrhea model of thirty-two natural teeth set in rubber tubing, and arranged in upper and lower sets in an articulator with a heavy rubber band in front, which acts as lips, and all tooth surfaces and pockets must be reached through the rubber lips. By fastening this model to the head-rest of the operating-chair, an instrument can be readily fitted by using annealed stovepipe wire, one and one-half to two inches in length, in a socket-handle. Flatten the point of the wire and bend it so as to reach the required spot or surface; then bend or make an instrument of the same angle, with a spoon-shaped point, and with it remove the troublesome deposit. I have a set of twenty-four special shapes, but I find cases where it is necessary to change the angles of these instruments in order that the spoon point may rest at the proper angle against the affected surfaces. In this way any deposit in any location can be reached and removed. The instruments should be kept sharp for this work, and the pull motion should be used, as with the push motion there is danger of dislodging and forcing a scale of calculus into the tissues, where it will be difficult to find it, and if not removed it will again become attached and the disease will continue in a more aggravated form.

The rough deposits can be detected by the tactile sense, but the hard, smooth, or glazed deposits can only be detected by actual sight. A true alveolar abscess does not discharge pus through a pyorrhea pocket. But it is not uncommon, as a result of encroachment of pyorrhea at the apex of a root, for inflammatory action to cause the death of the pulp, which becomes infected, and in turn will reinfect the cleansed or treated pockets, and this state of affairs will continue, or be repeated, until

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the pulp is extirpated and the canals antiseptically cleansed and filled.

Circumscribed abscesses may be the result of incased deposits caused by some local irritation, and swelling that forms a barrier to the free escape of pus. From experiments which I have been making on rabbits I find that after infecting a fresh wound in the gum, with pyorrhea or other pus, the parts will continue inflamed from two to four days, and then rapidly heal, but by putting a rubber band around the tooth and pressing it under the gum and allowing it to remain, and in this way establishing a pocket, and then infecting this wound with pus from pyorrhea or chronic ulcer, you will establish the disease, which will be self-sustaining.

There have been experiments made in the human mouth where the teeth have received little or no care, but where there was no pyorrhea present, with similar results as in the rabbits, but there was a tendency to outgrow the disease without treatment; but with treatment the cases yielded quickly and a cure resulted. I think that in these cases the condition of the system was such as to resist disease, and re-establish health, and also that the exciting cause was not continued long enough or to the extent where we have deposits or other causes named in this paper.

From recent examinations for a specific alveolar pyorrhea bacillus, from cultures infected by pus-germs taken from pyorrhea pockets, a competent bacteriologist[1] has thus far been unable to find bacilli that are not found in pus from other infected traumatisms of the mouth. Yes, we mean traumatism, the same as an infected condition from a sliver in the flesh, and that is the condition that we have in pyorrhea alveolaris, with the same results becoming chronic from long standing, as fistula, ulcers, etc., in other parts. The condition of the apex of the roots of some teeth will remind one of a condition known as absorption, and is generally acknowledged as such. But can tissue be absorbed and still remain as debris in the pocket? Such is the condition found in pyorrhea pockets, which can be easily proved by taking the contents of a pocket, dissolving it in hydrochloric acid, then adding three times its bulk of water; filter, boil, and when cold add a solution of ammonia, which will precipitate the phosphate of calcium[2]. The same result is attained by rinsing a freshly extracted roughened pyorrhea root in cold water, then with a stiff brush and water brush the roughened parts and put the resulting product into a test-tube; add hydrochloric acid and water, if necessary; filter and boil, and to this add a solution of ammonia, and the lime salts are precipitated. The decalcified cementum and dentine, through their roughened surface, spiculi and debris, act as irritants to the already inflamed tissues which are in the depth of the pocket, and as a result pus will continue to flow. Many teeth affected with pyorrhea may have a pocket only on one side of the root, leaving the three remaining sides healthy. Other teeth may have only one root affected, and the other root, or roots, as the case may be, are in good condition. To illustrate, I will cite some persistent cases from practice:

CASE 1.—Mr. G., about 30 years of age, was employed indoors at very confining work. The color of the skin and mucous membrane would suggest anemia. Lacerations or injuries to soft parts are slow to heal. He had very serious trouble after the removal of an impacted third molar. In 1898 I made an examination of his mouth and found the right upper central and left lower central affected, having deep anterior pyorrhea pockets, with a profuse flow of pus. I gave both cases thorough surgical treatment, which consisted in the removal of all deposits and the curetting of pockets and margins of the process. I then filled the pockets with iatrol which had been moistened with equal parts of oil of cassia and carbonate of creosote, and painted the gums with tincture of iodin, repeating the iodin treatment about twice a week[3]. He derived little, if any, benefit from this treatment. I then put the patient on tonic and alterative treatment, and in about three months the pus in the pocket of the upper central disappeared, and the pocket closed. About this time I drilled into the lingual surface of the lower central and found the absence of the pulp. I used thorough antiseptic treatment of the canal and filled the same with chloral percha and guttapercha points. Treatment was continued from once to twice a week for two months longer, but pus still persisted. In June I examined the apex of the root and found it denuded and roughened. I amputated the lower fourth of the root and rounded the stump, and the soft parts healed kindly under antiseptic treatment, and no pus has been present at any time since the operation. The gums are not yet entirely restored, but the tooth is doing good service.

CASE 2.—Mr. H., about 50 years of age, has given his teeth considerable care, and, I think caused pyorrhea from the injudicious use of a wooden toothpick. He had several teeth affected by, and treated for, pyorrhea during the last ten years, and in all but two cases a cure had been effected. In June, 1898, he was referred to me by a brother practitioner, and on examination I found the upper right second bicuspid, and first and second upper right molars, also the interproximal space between right lower second biscupid, and first lower molar, also lower central on same side, diseased. He had an old chronic pocket on the anterior root of the left lower first molar. This tooth and the first upper molar on the opposite side had been treated by a good dentist and given up as hopeless about eight years previous, and the patient was instructed to use a syringe with an antiseptic to keep the pockets clean, as the best that could be done for them. I gave the usual surgical treatment, as in the former case for the four other teeth, which yielded readily and where a cure was affected. At my solicitation the gentleman allowed me to experiment with the two chronic cases. On examination I found the pulps dead in both teeth; they were removed and the canals filled. I then gave them both a most thorough surgical treatment, which resulted in the almost entire cessation of pus for a short time, but the old condition was resumed. I re-examined the pockets for the cause, and continued antiseptic and stimulating treatment until September, when I considered the cases hopeless and decided to amputate the roots. In the upper molar I removed the anterior buccal root. The soft parts closed up and yielded readily to treatment and we have not had the appearance of pus up to the present time. After becoming satisfied with the result obtained in the upper molar, I amputated the anterior root of the lower molar, with similar results. The teeth are now doing good work with an absence of pus. The roots were found roughened, with slight nodules of cementum around the apices, showing Nature's attempt to recalcify and thus produce a cure.

[1] The author of this experiment will give a full report of his work on pyorrhea bacilli as soon as he completes his course of experiments.

[2] Attfield's General Medical and Pharmaceutical Chemistry—Calcium Reaction.

[3] Talbot: Pyorrhea Alveolaris. International Dental Journal, April, 1898.

Many other cases could be reported to show the success following the thorough removal of the cause for persistence of pus in pyorrhea, which to my mind proves the local character of the disease, and shows that malnutrition plays but a small part when the actual irritation is removed.

103 State Street.

THERAPEUTICS OF INFLAMMATION.*

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This subject would indicate a paper of wide scope and the consideration of a matter which has often been thoroughly aired and discussed. I do not wish, however, to weary you with any generalities, but rather to take up some forms and conditions of inflammation which will interest you as dentists, as well as practitioners of medicine. As was suggested here last year, there is a common ground upon which dentists and doctors may meet, and the therapeutics of inflammatory conditions about the mouth, though a place oftentimes studiously avoided by both professions, should be cultivated in common by both.

I do not wish to enter into a controversy as to the definition of inflammation, but will merely state that my remarks have to do more particularly with the pathologic condition characterized by an exaggeration of physiologic function in which engorgement and pain are the two characteristic symptoms. The rational treatment for all inflammatory processes is to remove the cause, if possible. This usually takes us into the field of surgery, as nearly all the inflammatory processes are of bacterial origin, but there is still left for the therapeutist an opportunity of relieving the pathologic conditions present when the other alternative is not to be accomplished, or during the time when a diagnosis is being made.

Heat and cold are the two remedies most extensively used for the relief of congestion and pain and there has been considerable discussion as to which is the more efficacious for this purpose. When the up-to-date surgeon appears before a learned body of his professional brethren he advocates the use of cold only, as that impedes the propagation of the germs which he assumes cause the trouble. In his private practice, however, he allows the use of hot applications and poultices, because it relieves the pain, and nobody will find out how antiquated his practices are in comparison with his precepts. On the other hand, the empiricist adheres strictly in precept and practice to the use of hot applications, because experience has taught him that they alleviate the two prominent symptoms present—engorgement and pain. For my part, however, it appears that each has a proper place in the therapeutics in inflammation without violating the laws of reason or repudiating clinical experience.

In the first stage in inflammation, when there is dilatation of the afferent blood-vessels and an increase in the rapidity of the flow of blood, cold applied to the part will contract the vessels and prevent the subsequent engorgement, and in this manner pain may be avoided. On the other hand, when the engorgement is already present and blood stasis has supervened, then the application of heat will dilate the afferent vessels, relieve the engorgement and alleviate the pain. This same principle applied to internal medication will also be useful in the relief of these symptoms.

The immediate indications in the treatment of these conditions are for the relief of pain. In true inflammatory processes pain is caused by the engorgement of the blood-vessels and the impingement of the nerve filaments by the consequent exudate. The rational method, therefore, of relieving it is to reduce the arterial tension. This may be done by dilating the peripheral vessels, either by the use of diaphoretics, cardiac depressants, or counterirritants. Arterial tension is also reduced by the use of hydragogue cathartics, and congestions about the head are particularly benefited by the use of cholagogues. On the other hand, opiates, by checking alimentary secretion and increasing the blood-supply to the head, not only fail to be useful, but are contraindicated, except when given in the form of Dover's powder, which acts as a powerful diaphoretic, and relieves the congestion. In painful affections of an asthenic type, such as in neuralgias caused by faulty nutrition of the nerve-centers, they act prompty and well. In treating inflammations about the mouth I think the following hints will be of service: 1, a powerful purge, such as calomel in 10-grain doses, should be given, followed by a saline cathartic; 2, a coal-tar analgesic acting upon the skin, such as antipyrin in from 5 to 10 grain doses, or, in people of rheumatic tendencies, salol and phenacetin in 5-grain doses, each, or acetanilid and salicylate of soda in similar doses. If, on account of the condition of the patient, these heart-depressing coal-tar derivatives may not be deemed advisable, Dover's powder in 5 to 10 grain doses may be substituted. This treatment is not calculated in any way to remove the cause of the malady, but rather to mitigate the pathologic conditions presenting during the interval between the time of diagnosis and the completion of the surgical procedure. In inflammation, especially in the bony cavities about the mouth, such as pulpitis, this treatment will be found to be particularly valuable, as a considerable time often elapses before an accurate diagnosis can be made. The rationale of this treatment is apparent, as the lowering of the arterial tension by cathartics and diaphoretics not only prevents any further exudate and consequent pain, but also promotes absorption, while the coal-tar derivatives have specific analgesic properties. Illustrative of this point I wish to relate a case:

Mr. X., aged 45 years, laborer, was attacked with severe headache. A physician was consulted, who pronounced it neuralgic in its nature. The patient was told to consult a dentist, who extracted one or two teeth in the neighborhood of the most painful portion of the jaw from which the pain seemed to start. This afforded no relief. The dentist was asked to remove the one remaining tooth, which he refused to do, because it was perfectly sound. He was referred back to the doctor, who was convinced that his diagnosis was wrong and proceeded to treat the case symptomatically, as he had no basis for a diagnosis. Morphin was given in $^1/_6$-grain doses, which was increased until the patient received $^1/_3$ grain in every three hours, the result being that the pain increased to such an extent that he could not lie down at all. At the same time, on account of the soporific action of the morphin, he could not stay awake long enough to stand up. When in this pitiable condition I was called to see him. I made a diagnosis of a circumscribed inflammation within a bony cavity and too much morphin; and prescribed 10 grains of calomel and 10 grains of jalap to be taken in one dose, followed in four hours by one ounce of Epsom salts. The relief

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was remarkable, and to my mind strengthened the diagnosis. Dr. G. V. I. Brown was called in consultation, and a careful examination was made. Percussion elicited the fact that an inflammatory process was going on in the pulp of this apparently sound tooth. Dr. Brown removed the cause, and an immediate recovery followed.

The conclusions that I wish to draw from this case are:

1. Patients should not be sent from doctor to dentist and back again when a consultation is possible.

2. We should not take such a radical view of surgical procedure as the only method of curing inflammatory processes as to prevent our using all possible means for the relief of the patients during the time when a diagnosis is being made and the surgical treatment instituted.

3. We should not resort to the promiscuous use of opiates or any other analgesic as a temporary measure when the pathologic conditions may be treated rationally.

4. Having made our patients comfortable we should take plenty of time to make an absolute and accurate diagnosis, thereby saving the patient the annoyance of undergoing unnecessary and painful operations and possibly preserving for him his teeth or other necessary organs.

MEDICAL JOURNALISM.*

ITS END AND AIMS.

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NEW YORK CITY.

Let me preface my paper with an expression of my deep appreciation of the honor which your President has conferred upon me by asking me to address you. But the personal element in his invitation, however flattering, was entirely overshadowed by the fact that the invitation itself was an evidence that the principles whose adoption by the profession I was perhaps the first to urge, in an insistent and chronic fashion, were to receive the recognition of a public hearing before the representative body of American medical journalists. For your President suggested that I write upon part of the general subject to which my editorials have been devoted.

My paper is not a long one because, not devoted to a scientific subject, it gives no scope for the usual padding of domestic and foreign quotations and references; it is, moreover, upon a theme of such paramount and urgent importance that any save the directest treatment would be inappropriate and nugatory. I have chosen for this dissertation "The End and Aims of Medical Journalism," and I shall endeavor to show that this journalism, if true to itself, can adopt but one End though its Aims may be many.

In the economy of human nature there is a principle to which all of us are at all times subject. It is a necessity of intelligent existence and is called "the law of accomplishment." In every act or series of acts of every man, whether it be to pass an idle hour or the performance of some serious work, there must always be, latent or expressed, one dominant idea—a purpose, an ultimate object, *an end*. So complex are we, for the accomplishment of every ultimate object or end one or more subsidiary acts are necessary and the particular purposes or objects of these secondary acts are properly defined, in their relation to the main object, as *aims*.

It is in this sense and thus defined that I would consider the end and aims of medical journalism. It is beside the question to discuss the end and aims of individual journals or the special ideas of individual editors; it is the idea of *united accomplishment*, conveyed by the term "journalism," and its special application not only to medical subjects but to the medical profession, as expressed by its adjective, which shall occupy our attention.

It is not enough to minister to the wants of the profession merely as individual men, for it means little save irony to the average practitioner that he may read of the latest advances in his science if his family be constantly at the starvation point because his profession is powerless to protect him against the rivalry of pseudo-charitable hospitals and dispensaries, legalized quacks and other malignant enemies. To enlarge upon this idea I would say that everything which makes not only for the advancement of scientific knowledge but for the better application of this knowledge in the prevention and cure of disease comes within the scope of medical journalism. But the higher the profession stands as a corporate body in the estimation of the community, the greater must be its influence for good upon the public health. The piping voices of individual physicians can not command more than the passing, casual attention of the body politic or social but the united voice of the medical profession would come as an authoritative, irresistible force. It would be the decision of the supreme court of science, against which there is no appeal.

The *end* of medical journalism, therefore, must be to strive for the corporate interests of the profession, to struggle to obtain its recognition as a corporate force in fact as well as in name, that thus the public well-being in all that pertains to health, of which the profession avowedly stand as the mentors and arbiters, may be best protected and advanced. Nothing less, evidently, than this idea in its broadest scope can fill the end of medical journalism.

With this end in view, what are the means to be employed in its accomplishment, what are its "indications?" Some of these are self-evident, others are not. If medical journalism is to become the constructor of an united, corporate profession, if thereafter it is to be the defender and the mouth-piece of this great body, it must first construct *itself;* it must subordinate its special, individual interests, when necessary, to the common good and must unite in earnest for the same end and with the same aims. Petty jealousies, born of the fear of competition, and distrust must be put aside. The great journals, of far-reaching influence owing to a larger capital, must not contemn and elbow out their smaller brethren who are conscientiously working, to the extent of their ability, for the same great end. On the contrary, a policy of encouragement and helpfulness is absolutely called for here. And indeed it is needed. No society was ever reformed by those, no matter how well inclined, whose existence was a daily struggle for bare maintenance; it is there we must look rather for a natural resentment against the irony of an undeserved fate. And it is well if, beset as they are by spacious temptations, they maintain the ethical code of their more fortunate fellows. What a parody upon honesty and truth, what hypocrisy, if the great and well-to-do medical journals, preaching altru-

*Read before the American Medical Editors' Association, June 7, 1899.

istic principles and high ideals for the regeneration of the profession, turn in the same breath to their smaller struggling brethren and say: "You are too poor and insignificant to be of any assistance to *us*" (not to the *cause*, mark you!); "on the contrary you impede our influence by taking from us a certain number of subscribers who, if you did not stand in our way, would come to us!" Think you that medical journalism will become powerful and united by means of such a policy? And may we expect the editors and proprietors of the smaller journals, who for years have manfully and unselfishly struggled to maintain an ethical standard and to work for the interests of the profession, to be favorably impressed by any plan for its regeneration which involves their own extinction? No, let those of us whose influence is greater win the confidence of those who have less that, recognizing the justice and earnestness of our intentions by the consistency of our actions, they may come in with us and form a strong and united journalism. Then indeed can we successfully crush the mass of unethical, money-grubbing, journalistic small fry, who have so long been a reproach, a hindrance and a pollution to the profession.

I have heard it said that there were too many small journals in this country, that many of them were too poor and insignificant to assist the cause of medical science by the presentation of useful matter; hence, by catering to a cheap and unscientific taste, they degrade the standard of journalism and retard the development of the profession. There is much truth in this complaint, but I do not believe the remedy lies in a policy, on the part of the higher class of journals, of extermination. If these small journals maintain the code of medical ethics they accomplish within their own sphere, even though their taste from a scientific and literary point of view be execrable, what the great journals edited in our great cities can not do—they appeal to and satisfy the taste of a class of honest and hard-worked practitioners to whom a finer and more expensive mental diet, under present conditions, would mean starvation.

This class of men will not subscribe, under present conditions, for the great scientific journals. They are comforted and not abashed to read of the perplexity and ignorance of physicians of their own class and opportunities; their wives enjoy the announcement that "Dr. Smith, in the adjoining county, became the proud possessor, as the journal went to press, of a fine and healthy pair of twins and that the mother is doing well." This supplements the weekly newspaper and the interspersed jokes are not too deep or original to puzzle the tired brain of the physician when he returns to a late supper from professional calls in a thirty-mile circuit. Yes, they supply a demand. Not in contemptuous aloofness or organized attack lies the remedy against this class of journals. On the contrary, it lies in the opposite policy. By encouraging the editors of these journals, whose subscriptions are more frequently paid in chickens and potatoes than in cash, to keep in touch through their exchange lists with the journals of happier fortunes, we will make them realize that they are joined in close brotherhood with those who are ready to share their greater opportunities for the advancement of a united and powerful press. Not long could such influence be resisted; insensibly would the subscriber feel the inspiration and remember the days of the medical college, when he came face to face with the great men of his profession and dreamed that Life held something more for him than hard knocks in her closed fist.

Thus would the regenerative principle leaven the profession and the idea of union and co-operation become fixed and practical. Medical journals *then* which, through a natural inaptitude or the perverseness of their editors, refused to respond to the new awakening and, not fit to lead still dragged in the wake of their subscribers, would quickly die of inanition.

We who call ourselves the representatives of medical journalism in this country must recognize the fact that we are first called to this responsibility and we can neither ignore nor shirk it. We can not work for ourselves alone nor withhold recognition and assistance in lifting others because we fear to let them stand by our side. There is room for all who in themselves are worthy.

If all medical journals would adopt the motto "When we help each other we help ourselves," would believe it and practice it, there would soon cease to be so great a disparity in the prosperity of equally ethical journals; nor would anyone be less prosperous because another became so. For example, if the medical press would unitedly demand prompt payment from its subscribers, each journal urging this justice not for itself alone but insisting upon the broader principle that *all* medical journals are equally entitled to the support of their subscribers, the great journals, who can afford to be pioneers of reform, would not only benefit themselves but give heart of grace to their less prosperous brethren who do not dare, without such initiative, to demand that which is not only their due but for the want of which their influence for good to the profession is retarded and minimized. Then would enter into the field of journalism the only form of competition which should exist there—the personal equation of editorial ability and conscientious work.

As a beginning or working basis for the union or co-operation of the medical press I believe the following to be essential factors:

1. The formal adoption by an organized and representative body of medical editors of the End or ultimate purpose which I have outlined in this paper; by unremitting dissemination through editorials to inoculate the profession with the idea of union and co-operation; an insistence upon the necessity of this action and an explanation of its urgency and of the immense power and influence which would accrue therefrom; and the financial betterment as well which must be felt throughout its ranks, especially by those who are now struggling with the grim problem of bare existence owing to the unholy competition which is engendered and necessitated by the powerless of our disintegrated profession to protect its members from outside attacks.

2. The prompt and generous response of all journals to the call, by any one journal, for editorial support on any subject which clearly tends to the unity of the profession or its betterment as a whole.

3. The encouragement of medical proprietorship of medical journals and the discouragement of all journals whose policy is not entirely under medical control. Especially does this cause apply to those journals which do not contain editorial comment. They are "dead-wood," so far as the true end of medical journalism is concerned, and must always remain a hindrance and a clog by their immobility.

4. The adoption by all of the principle that medical journals, like other journals, must be paid for *in advance;* the abolition of the credit system and the ruthless cutting off the subscription list of all subscribers who are too dishonest to pay for what they have bought and consumed. The adoption of this principle is absolutely necessary to the existence of independent journal-

ism and the absence of it has been the sole cause of the weakness and insignificant influence of the medical press hitherto and consequently of the segregation of the profession. In order to make this rule effective, so that all may benefit, and none may suffer, it will be necessary that all should enter into a specified agreement. Moreover it will be necessary to force by all legitimate means —and they are many and practicable—those journals whose financial resources are independent of their subscription-lists and who have pursued the policy of long credits for the sake of competition to change their policy and follow our lead.

These cardinal points I believe to be the stepping-stones to an united and powerful press, whose advance in material prosperity and the dissemination of knowledge, in honor and influence, no man can guage.

When this first aim has been accomplished, when medical editors show an united front and concerted action, we may undertake the next with full surety of accomplishment. This is to awake the profession to a realization of its corporate needs, to point out to it not only the benefits which must accrue to it, individually and collectively, by union and co-operation, but to convince it that only through these means can the elements of disintegration within itself be counteracted and even the existence of its influence for good be maintained.

We can further show how necessary it is to increase and to exert this good influence, until it shall become a controlling one, upon everything which ministers and is necessary to the dissemination of medical science and its application to health and disease.

There are several trades which are entirely dependent upon the profession for their existence. They live by us and yet here, in reversal of all laws of trade, it is the supply and not the demand which governs the equation. Large profits have been made in each of these trades at the expense of the profession; yet all the benefits have gone to enrich the producers except in so far as competition, regulated not by our demands but by themselves, have worked in our favor.

First in order of these is the medical book trade. Absolutely necessary as medical literature is to the medical man, its quality and quantity are entirely outside his control. Representing as a medical book does to its author the arduous and difficult work of years and of incalculable benefit as it frequently is to the whole world, he rarely receives from his publisher more than a pittance in comparison with the compensation of the lay author. The profits from its large sale enrich the publisher, while the medical author is expected to be content with the personal advertisement and increase in practice.

Let us take next the manufacturers of medical instruments. Here the case is far worse. No matter how much time, labor and experience an instrument has cost its inventor; no matter how valuable and even necessary its use may be in a large field of work; no matter how great and profitable its sale, its author receives his compensation again in notoriety and honor, while to the manufacturer go the financial benefits. When once the model has been given to the maker of instruments, its control passes out of the surgeon's hands. It is generally materially altered, after a varying period, to suit the exigencies of trade and a so-called improvement made by an irresponsible and usually ignorant person is expected to give another boom to its sale. In this way the most valuable instruments have passed out of their author's recognition and their usefulness has been entirely destroyed. There is no protection and no redress.

In the drug trade we find a similar state of things. The interests of the physician are ignored on all sides. Many of the most valuable preparations are proprietary while, owing to the evil of "substitution," he can not even be certain that his patients will obtain the medicine which he prescribes. Patients can procure drugs of all kinds without prescription and the retail druggist does not even hesitate to usurp the physician's rights and prescribe. The daily press teems with advertisements of drugs and remedies for every form of disease, the inducement to buy which is that thereby a physician's diagnosis and prescription are rendered unnecessary. Thus the profession can protect neither itself nor others.

In the necessary process of regeneration the profession will realize the importance and the justice of taking under its own control and regulation the output of all trades which are dependent upon it. It will thereby secure a more equitable division of the emoluments, great abuses will be remedied and the benefit conferred upon itself and on the general public will be incalculable.

Until very recent years, the *end* of medical journalism in this country was that of all commercial enterprises—money-making. It was entirely in the hands of the publishers of medical books. The means they employed for the accomplishment of their end were undoubtedly of benefit, if only a partial one, to the profession, in that they supplied medical literature which the profession could not or would not supply for itself, but the *greater interests* of the profession, its dignity, its immense potential influence, its opportunities for greater prosperity and power were never touched upon—as how could they be?—and the profession has slumbered on or quarreled and fought, taking its pap contentedly from whatever careless hand would give it.

But to-day, when medical journalism is coming rapidly into the hands of medical men, its end and aims have changed. We will no longer feed the profession upon pap with a modicum of soothing syrup; we will say: *Stand up and feel your limbs; they are massive and strong. Here is a man's food; feed yourself.*

For we are not hirelings; and the interests of the profession are our own interests.

RECENT BACTERIOLOGIC RESEARCH.*

ITS EFFECTS ON MODERN SURGERY.

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The prevention of infection and the securing of ideal aseptic healing of wounds inflicted by the surgeon's knife being almost entirely a question of mechanics, many physical difficulties have become familiar to us. We have learned to mistrust the efficiency of antiseptics and have become aware of their toxic and devitalizing effects upon wound surfaces. Fortunately, bacteriologic experimentation has been revolutionized, and led to more reliable results, owing to the recognition of the very different behavior of bacteria in test-tubes and in wounds. With the inauguration of aseptic principles by Neuber, Bergmann, Schimmelbush[1] and a host of others over ten years ago, the perfection of simplicity seemed within reach. And yet, while in our days, phlegmonous inflammation, erysipelas, tetanus and malignant edema following operations are almost unheard of, we not infrequently see a

* Read before the Missouri State Medical Association, at Sedalia, May 17, 1899.

stitch-abscess, an escaping ligature or a local suppuration interfere with the ultimate cure for which the operation was undertaken.

Of the four sources of infection, only one has been satisfactorily eliminated by boiling or steam sterilization. I refer to instruments, ligatures, sponges, dressing material, etc. The remaining three sources—the air, the surgeon's hands and the skin of the patient—are still with us. To prevent infection from the air, it is well to have the operating-room well ventilated, and then thoroughly closed a short time before the operation, and every one entering the room should wear a sterilized gown. The shoes take a not inconsiderable amount of dust into the room, which dust is liable to be deposited upon the wound; to avoid this, some advise the use of rubber overshoes, moistened with bichlorid solution, on operator, assistants and spectators.

A much more fruitful source of infection than dry dust is the bacteria thrown into the wound enclosed in minute droplets of moisture from the mouths of the operator and assistants. Tyndall's[2] experiments seem to show that air, quietly expired from the lungs, is practically free from microbes. Flügge[3], however, has proved that numerous and often virulent microbes exist in the air expired during the acts of speaking, coughing, sneezing, etc. This virulence is due to their existence in a moist state, ready for immediate reproduction, while those in dry dust require a period of incubation. Silence while operating is the best preventive against this accident, but when one considers the prevalence of "catarrh," it may perhaps be wise to wear a mask consisting of two layers of fine mull, as devised by Hübener[4], and also a protection for the beard and hair. Nutrient plates exposed for ten minutes to air expired from a man talking without a mask have given 100 to 600 colonies, while with a mask the colonies varied from 0-1 or 2, or exceptionally 10-20.

Recently, Gottstein[5], in Mikulicz' clinic, has shown that it is impossible to render the hands bacteriologically sterile by any present known method. He found that hands apparently sterile, immediately after disinfection, were often not sterile soon afterward, and never sterile at the end of an operation. Pyogenic organisms were often found among the colonies. These experiments led to a technic in which no brush was used twice without resterilization, and each individual had his own supply of alcohol, lysol or bichlorid. The finger tips were dipped in strong Tr. iodin. and during the course of the operation, the hands were frequently antisepticized. Finally, in the same clinic, the superior asepticity of sterilized thread operating-gloves, changed frequently during the work, was demonstrated beyond a doubt by means of a large series of culture-tests, but whether they should come into general use in aseptic work, remains to be determined, as they are a hindrance to delicate manipulations. At present, many of the world's best surgeons are making use of them.

In view of ascertaining to what extent the last source of infection—the patient's skin—can be overcome, Lowenstein[6] in over 100 cases placed small pieces of disinfected skin into culture-media at the time of operation. He obtained absence of growth in 40 per cent. Lockwood[7] and Samter[8], similarly, but at times dividing in smaller particles, found absence in 30 per cent. Gottstein[9], in a much larger series, by scraping the excised piece, using three sterile knives, and planting separately, superficial, middle and deep layers, found absence of growth in only 20 per cent. The deeper layers most frequently contained microbes, consequently disinfection is seldom if ever obtained. Not only the deeper layers of epidermis, but hair-follicles, sebaceous glands and even the lymph-spaces of the true skin often harbor microbes. Formalin wet dressings changed every six hours for twenty-four or forty-eight hours previous to operations seem to have given the best results. Fortunately, the ordinary skin bacteria are not of a very pathogenic nature, the staphylococcus albus, the cause of stitch-abscess, being most frequently met with.

Haegler[10], of Socin's clinic, found that sutures and ligatures from stitch-abscesses often gave negative results from culture, but that if microscopic sections of the knots or threads were made and stained by Gram's method, bacteria were always demonstrable inside the fabric.

To avoid stitch-abscesses and escaping ligatures, it is advisable to impregnate the ligature and suture material with some antiseptic—bichlorid, iodoform, silver—in order to inhibit the growth of any bacteria which may gain access to and find shelter within the thread, and thus escape the bactericidal action of the primary wound secretion. The necessity of returning to antisepsis in this particular is shown by another observation of Haegler. Silk ligatures, sterilized by boiling, when pulled through the fingers of disinfected hands almost always become infected, and give positive results on culture, while if, in addition, the ligature has been impregnated with bichlorid, all growth is inhibited.

While the larger absorbing surface presented by the peritoneum is capable of looking after microbes—which are introduced during all so-called aseptic operations in the abdomen—and thus our gynecologic brethren may be able to discard antiseptics more or less safely, I am firmly convinced that it is dangerous to discard them in general surgery.

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A CASE OF MIDDLE EAR DISEASE.

SIMULATING MENIERE'S DISEASE.*

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This case has excited some interest inasmuch as it has been diagnosed and treated by several physicians for very varying diseases. The same complex of symptoms has led the physicians to widely different conclusions. A few have diagnosed some form of stomach trouble, and one, Meniere's disease. My conclusions will be given after reviewing the history and symptoms of the case.

J. A. B., aged 41 years, a business man, was referred to me for examination, by Dr. W. H. Weaver, who has him on treatment for his ear disease. It is by the consent of Dr. Weaver and the patient that I report the case. He complains of recurring attacks of dizziness, nausea, vomiting and tinnitus. The tinnitus is likened to the roar of a distant moving locomotive. When the right ear is stopped the subjective noises cease. Stop-

*Read before the Chicago Laryngological and Climatological Society, May 20, 1899.

ping the left ear has no effect on the subjective noises. There is slight pain in the occipital region, occasionally. The attacks of dizziness, nausea, etc., are preceded by a full feeling in the head for about fifteen minutes. In walking there is a tendency to walk off into the gutter, or against the side of the adjacent building.

The first attack came on about four years ago and lasted for thirty days. During the height of the attack there is usually nausea and vomiting; after two to four weeks the symptoms subside and dizziness remains as the chief sign. The attacks are usually about one year apart and seem to depend somewhat on the season. The onset of winter seems to precipitate one. The last attack came on in November, 1898, and lasted until April 4, 1899, when it was suddenly relieved by Politzerization at the hands of Dr. Weaver. The ears have been inflated about three times a week since then.

In the physical examination of the drumhead in the left ear the drumhead was markedly retracted, lusterless and thickened along the manubrium, in the right slightly retracted, lusterless, and also thickened along the manubrium. Tuning-forks ranging from 26 to 2048 vibrations per second were heard with both ears, but more faintly in the left. The Weber test gave plus in the right or better ear. The Rinné experiment gave right ear $=+5''$; left ear = no bone conduction. The Politzer acoumeter was heard but a few inches from either ear. The Galton whistle was heard to about 40,000 vibrations per second in each ear.

The above group of symptoms seems somewhat contradictory at first thought, but when these are studied carefully they are found to be characteristic of a certain type of middle ear instead of labyrinthine disease, or of stomach disorder. The presence of increased bone conduction on the right side, and the absence of bone conduction over the left mastoid seem to point to some form of nerve or labyrinthine deafness. When the deafness is due to middle ear disease there is usually an increase of bone conduction on that side, while if the deafness is due to nerve or labyrinthine disease there is a decrease of bone conduction on the deaf side. This gentleman is most deaf in the left ear and bone conduction is entirely lost on that side, while it is comparatively greater on the right side or side of best hearing. Thus far the signs point to nerve or labyrinthine disease. When, however, we remember that the Galton whistle was heard to the normal limit—40,000—it becomes apparent that there is need of further investigation before deciding as to the exact nature and location of the disease. If it were true nerve deafness the high tones of the Galton whistle would not be heard. I accordingly inflated the tympanic cavities through a catheter and again tried the Rinné experiment with the remarkable result as shown in the following statement: Rinné right ear, $+10''$; left ear $+10''$. In other words, bone conduction had been restored in the left ear, both ears now approaching well toward the usual normal Rinné test.

The explanation is simple: the extreme retraction of the drumhead had forcibly driven the foot-plate of the stapes into the oval window, thereby producing increased intralabyrinthine pressure which accounts for the loss of bone conduction on the left side. Real nerve deafness does not exist, but there is a functional disturbance due to a change of tension. The nausea and vomiting were also due to the increased intralabyrinthine pressure and not to real stomach disease. The case is certainly not one of Meniere's disease, as in that disorder there is sudden and complete, or almost complete, loss of hearing, attended by nausea and vomiting, all of which are due to an effusion of blood and plastic lymph into the semicircular canals and vestibule. The hearing is rarely if ever improved after such an effusion. In this case there was no great loss of hearing and there are abundant evidences of disease of the middle ear to account for all the phenomena in the symptom-complex herein recorded. The case may be called Meniere's symptoms, but not Meniere's disease. It is in reality a case of chronic otitis media with great retraction of the left drumhead whereby intralabyrinthine tension is increased.

100 State Street.

Correspondence.

Malarial Hemoglobinuria.

CINCINNATI, OHIO, July 30, 1899.

To the Editor:—I have been particularly interested in the articles on malaria, in the JOURNAL of July 29. Coming from such acute observers as Dock and Fackler, they can hardly fail to attract attention, and certainly influence if not compel belief. Of especial interest is Dr. Dock's handling of that much discussed subject, malarial hemoglobinuria, and his remarks concerning the frequency with which this complication is reported on insufficient grounds, i. e., without corroborative blood examination, leads me to report a case in which the diagnosis was repeatedly confirmed by the use of the microscope. In brief, the history is as follows: A white adult male, aged 40, with frequent attacks of chills and fever for over a year previous to passage of blood in his urine, had taken quinin irregularly during that time, but had not taken any for several weeks previous to his hematuria. Blood had appeared constantly in his urine for two weeks previous to his coming under my observation, at times, he claims, almost pure blood being passed. In addition, he complained of progressive weakness, rapid emaciation, nausea, anorexia, dizziness, shortness of breath, palpitation, slight tremor of limbs, and cough. Physical examination: temperature 100, pulse 100, respiration 30; lungs showed a few coarse and fine mucous rales at apices anteriorly and posteriorly; heart normal; spleen somewhat enlarged; no enlargement of liver. Urinalysis: color light amber, acid reaction, sp. gr. 1010; sediment reddish, amorphous and very abundant; albumin present and in considerable quantities; no sugar; no bile. Microscopic examination shows a few red corpuscles and a large number of "shadows," a few crystals of uric acid, urates, granular and epithelial casts. Examination of the blood revealed crescents and ovoids; no other form found at that time. He was put on Fowler's solution, gtt. iii, three times a day, to be increased one drop per day. By the next day he had passed nineteen ounces of urine, and the red sediment and albumin were much less abundant. He was not given quinin at that time, the latter drug having but little influence over the estivo-autumnal parasite. On the second day he passed fifty-one ounces of urine with but slight red sediment. Quinin bisulphate was now started, 5 grains three times a day; the quinin did not increase the amount of blood in the urine. On the seventh day he passed seventy-three ounces of urine; flagellate bodies were seen in the blood for the first time. By the tenth day the blood had disappeared entirely from the urine, though albumin and casts still persisted, but no "shadows." At that time the quinin was increased to gr. x, t. i. d., and the Fowler's solution had increased to gtt. vi, t. i. d. This treatment was kept up for forty-five days, and by that time no plasmodia had been observed for over a week. I then lost sight of him for a time, but subsequently, on dropping his treatment after a few months, he was again attacked with the passage of bloody urine. One other point of interest in the case was that after a month's treatment as above, the hemoglobin was found un-

changed, on both occasions registering 37 per cent. division of two drops; nevertheless he gained markedly in weight and in health and strength. I am somewhat inclined to the belief that the destructive action of the quinin on the red blood-corpuscles neutralized in a way the good effects obtained by the administration of arsenic. Here then is an unmistakable case of malarial hemoglobinuria which was given quinin during the time of the passage of the blood, yet the blood in the urine, so far from increasing, steadily diminished. I have never seen an instance of hemoglobinuria in one of the regularly malarial intermittents, but have no doubt that if such occur, the result would be more favorable under quinin even than the case I have just reported. I do not think that even if quinin does produce hemoglobinuria in malaria, which I do not believe, that factor alone should deter us from using a drug which is almost a specific to the disease which we do know is frequently accompanied by this complication.

In regard to hypodermic injections, I wish briefly to state my experience with 7 cases of malaria all treated in this manner: all young adult males with fairly good family history; all of tertian malaria, 6 double and 1 single, in all of which the diagnosis was made by microscopic examination. In 3 all manifestations of the disease were stopped by one injection; in but 1 was no influence felt by one injection; in but 1 case was more than 6 grains given at a dose; the bisulphate was the preparation of the quinin used; all the injections but one were made deep in the gluteal region; very little pain was experienced, and that only at the time of the injection; but ten injections were used in all; no abscesses resulted from their use. In the cases in which an endeavor was made to change a quotidian or double tertian malaria into a single tertian by hypodermic injection of quinin, 1 was completely successful; 2 were partially successful; 3 were unsuccessful. Of these 3 cases 2 were completely cured by one injection, as shown by subsequent clinical history and blood examinaiton; the remaining case was not much affected. I might say in conclusion that the injections were given at the very beginning of the chill. Very truly yours,

MARK A. BROWN, M.D.

Dr. Murphy's Letter on Optical Diagrams.

RICHMOND, IND., July 31, 1899.

To the Editor:—In the JOURNAL of July 29, there is a letter by Dr. Murphy of Kansas City as to "Misleading Statements and Illustrations in School Physiologies, Physics, and in Text-Books on Diseases of the Eye," but unfortunately in this case it is Dr. Murphy who is misleading. He states that the text-books teach that parallel rays of light focus on the retina in the normal eye. This is just what they have taught, do teach, and always ought to teach.

The first three illustrations, which he states are incorrectly drawn, are just as correct as his Figures 5, 6 and 7. Possibly some slight objection may be made to them all, in that they take for their basis the old ray theory, which is entirely superseded by the wave theory.

Scheiner's experiment any one can perform by taking a visiting card through which two pinholes have been pierced, the distance between which is less than the diameter of the pupil; it will be found that if this diaphragm is held close to the eye while a bright star is being observed, and the subject is ametropic, there will appear to be two stars. If the upper right pinhole is covered with a red glass, while the subject is hyperopic, the red star will appear below; whereas, if myopic, the red star will appear to the observer as if from above. In the emmetropic there will be a fusion of the red and white stars into one.

This merely proves that Figures 1, 2, and 3 are consistent, for waves or rays from a star, that enter the pupil, are parallel. If we can suppose a case in which the upper part of the star was flattened so that we could tell it from the lower part, then in Sheiner's experiment, no matter if the observer was myopic, emmetropic, or hyperopic, in every case the flattened part of the star would face the lower part of the retina, while to the observer it would appear erect with the flattened part at the top, as in Nature. DAVID W. STEVENSON, M.D.

Retention of Life.

WASHINGTON, PA., July 31, 1899.

To the Editor:—Apropos of the editorial on "Retention of Life," in the JOURNAL of July 29, allow me to mention two cases which came under my observation in the past two years, while an interne in Western Pennsylvania Hospital.

The first patient, a slender youth of 19 years, slipped while attempting to board a moving train. The wheels crushed the right upper arm, right side of the pelvis, and left thigh. He reached the hospital in ten or fifteen minutes. Bleeding had stopped, but the cinder-covered bowels were protruding over the crushed right os innominatum and lateral abdominal wall. The patient was conscious and rational for fully an hour after the injury, until he died.

In October, 1897, a young tramp was found beside the Pennsylvania tracks, and brought to the hospital by ambulance. Examination showed both thighs entirely severed from the body, so closely to the pelvis that no operation could have given the needed flaps. The wounds were merely dressed; yet the patient lingered for almost a week. During this time death was expected almost hourly, yet consciousness remained till near the end.

To my mind such cases illustrate Nature's method of arresting hemorrhage from severed vessels—torsion. In this section of the country some surgeons rely almost exclusively on twisting the arteries to stop bleeding during an operation, and I have seen no untoward results, even when the popliteal and brachial arteries were twisted. The method certainly is deserving of more prominence than our works on surgery give it. Very truly yours, THOS. WRAY GRAYSON, M.D.

[Arresting hemorrhage by torsion has been discussed in medical journals, is mentioned in most of the text-books, and is used to a great extent by many surgeons. Our correspondent is mistaken if he thinks the method is not recognized.—ED.]

Yellow Fever.

WASHINGTON, D. C., Aug. 5, 1899.

To the Editor.—Among the outbreaks of yellow fever that have prevailed at Fortress Monroe, Va., and its vicinity let me mention one that has never been reported. In the early part of August, 1869, I had just come from quarantine duty at the mouth of the Rio Grande River, Texas, and being ordered to Fortress Monroe, found a French man-of-war quarantined in Hampton Roads because of yellow fever. Many of the crew having died, as well as the medical officers, the ship was visited daily by a surgeon from the fort, who went unrestrained about his duties after coming ashore. It was not long, however, before an unmistakable case of the fever broke out in a member of the family of one of the surgeons who had most to do with the fever patients on shipboard. We decided to keep the matter strictly secret, even from the commanding officer, and await developments. Happily the patient made a good recovery, and the disease did not spread. To this day no one but the two medical officers in attendance have ever known of its existence. To be sure, one case does not demonstrate much, but this instance shows the transmissibility of the disease, and the fact that its spread was controlled by isolation, and perhaps secrecy; for had the presence of yellow fever become known at that time among the twelve hundred people in this fort, many of them women and children, there is no telling how the panic ensuing from publicity of the fact would have ended.

IRVING C. ROSSE.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

American Gynecological and Obstetrical Journal, (N. Y.), July.

1.—*Etiology of Eclampsia and Diagnosis of Impending Eclampsia. Edward P. Davis.
2.—*Preventive Treatment of Puerperal Eclampsia. Richard C. Norris.
3.—*Use of Parotid Gland in Treatment of Ovarian Disease. E. Pierre Mallett.
4.— Vaginal Incision and Drainage for Simple Broad Ligament Cysts. Thomas J. Watkins.
5.— Infrapubic Route in Surgery of Uterus and Its Adnexa. William H. Wathen.
6.—*Hour-Glass Constriction of Membranes in First Stage of Labor: Clinical Study and Report of Five Cases. Ervin A. Tucker.

Southern California Practitioner (Los Angeles), July.

7.— The Nurse's Duty. F. T. Bicknell.
8.—*Christian Science—Divine Healing and Osteopathy. F. W. Bullard.
9.—*Radical Cure for Hernia. Wm. Le Moyne.
10.— Use of Water as a Remedial Agent. John C. Fisher.
11.—*Ethics and Methods of Preventing Conception. John C. King.

Western Clinical Recorder (Chicago), July.

12.—*Rational Diagnosis. Henry B. Faviil.
13.—*Atypical Pneumonia Following Grippe. A. T. Holbrook.
14.— Report of Case of Probable Thrombosis of Right Sigmoid Sinus, Arising From Acute Purulent Otitis Media; Recovery without Operation. F. D. Brooks and Thomas C. Phillips.

Obstetrics (N. Y.), July.

15.—*Operative Treatment of Labor, Complicated by Pelvic Deformities. George W. Dobbin.
16.—*An Embryo at Six Weeks—Difficulty of Producing an Abortion in Certain Cases. Turner Anderson.
17.— Symphysiotomy, With Report of Case. Arthur Devoe.
18.—*Physical Diagnosis in Obstetrics. E. A. Ayres.

Post-Graduate (N. Y.), July.

19.—*Diagnosis of Renal Tumors. Leonard Weber.
20.— Remarks on Gastric Ulcer, Especially on its Cicatrization. Achilles Rose.

Interstate Medical Journal (St. Louis), July.

21.—*Medical Clinic on Diseases of Children. Augustus Caillé.
22.—*Pneumonia Consecutive to Typhoid Fever, with Report of Case and Remarks on Bacteriology of the Disease. R. B. H. Gradwohl.
23.— Blackwater Fever. W. L. Brown.
24.—*Silver Salts in Ophthalmology. Edwin C. Renaud.

Journal of Tuberculosis (Asheville, N. C.), July.

25.—*Some Notes on the Tuberculin Test. Edwin O. Otis.
26.—*Diagnosis of Early Phthisis. Llewllyn P. Barbour.
27.—*Early Diagnosis of Pulmonary Tuberculosis. Chas. F. Denney.
28.—*Diagnosis of Joint Tuberculosis. James K. Young.
29.—*Report of Twelve Cases of Tuberculosis treated with Watery Extract of Tubercle Bacilli. J. Sutherland.
30.—*Local Treatment of Lung Diseases. Benj. F. Lyle.
31.— Use of Protargol in Diseases of Larynx and Pharynx. H. J. Chapman.

Hot Spings (Ark.) Medical Journal, July.

32.— Case of Gall-Stones—Medically and Surgically Treated. W. R. Blailock.

Alabama Medical and Surgical Age (Birmingham), July.

33.— Adenoid Vegetations in Vault of Pharynx, with Especial References to their Influence on the Ears and Mental and Physical Conditions of their Victims. J. H. Blanks.
34.— Future of Medical Science. G. C. Chapman.
35.— Examination of Urine. Edgar A. Jones.

Toledo Medical and Surgical Reporter, August.

36.— Typhoid Fever—Its Symptoms and Diagnosis. James C. Reinhart.
37.— Therapeutic Action and Usefulness of Alcohol. Harrison Hathaway.
38.— Retroperitoneal Abscess Simulating Morbus Coxarius or Hip Disease. O. M. Main.

Medical Sentinel (Portland, Ore.), July.

39.—*Pathology and Therapy of Cancer—With Special Reference to Cancer of the Stomach. A. C. Bernays.
40.— Acute Gastro-Intestinal Affections in Children. Geo. M. Wells.

Southern Practitioner (Nashville, Tenn.), July.

41.—*Are the Uses of Tobacco Detrimental to Mankind? T. H. Marable.
42.—*New Operation for Hernia. Emory Lanphear.

Southwestern Medical Record (Houston, Tex.), July.

43.—*Acute Bright's Disease, Superinduced by Pregnancy. B. S. Ezell.
44.—*Comatose Malaria. R. T. Morris.

The Philadelphia Monthly Medical Journal, June.

45.—*Pathology of Foreign Bodies in the Lungs. Geo. B. Wood.
46.—*Application of Following Underlying Principles for Sterilization of Lung Tissue in Tuberculosis. J. Mount Bleyer.
47.—*The Patient's Secret. Paul Stoock.
48.—*Fractures of the Extremities, a Report of 500 Consecutive Cases, Verified by Radiographs. G. G. Ross and M. J. Wilbert.
49.—*Primary Sarcoma of the Nose, with Report of Five Cases. Thos. J. Harris.
50.— The Pathologic Significance and Treatment of Leucorrhea. C. R. Hyde.
51.—*Human Hemoglobin in High Altitudes. W. H. Bertold.
52.— Rationalism in Practice of Medicine. Felix Kleeberg.
53.—*Successful Use of Thyroid Extract in Treatment of a Cerebral Neoplasm. S. Loving.

Northwestern Lancet (St. Paul), July 15.

54.—*Modern Veterinary Practice. M. H. Reynolds.
55.— Surgical Treatment of Strabismus and Heterophoria, with Report of 67 Cases. H. A. Beaudoux.
56.—*Ventrosuspension of Uterus. Aug. Eggers.
57.— Lights and Shades of Life Among the Insane. D. S. Moore.
58.— Report of Surgical Cases. John T. Rogers.
59.— Probing the Nasal Duct. J. H. Rindlaub.

Medical Age (Detroit, Mich.), July 25.

60.—*Tubercular Osteomyelitis. Angus McLean.
61.—*Modern Medical Text-Books. C. C. Mapes.
62.—*Four Cases of Tuberculosis Treated with Nuclein. S. H. Wellington.

Medical Record (N. Y.), August 5.

63.—*Question of Gruels in the Feeding of Infants. Henry Dwight Chapin.
64.—*Angioneurotic Edema and Allied Conditions: Report of Seven Cases. B. Onuff (Onufrowicz).
65.—*Reflex Cough. George L. Richards.
66.—*Case of Traumatic Neurosis with Hemorrhages from the Pharynx. Edward von Adelung.

New York Medical Journal, August 5.

67.—*The American Soldier and Venereal Diseases. A Refutation of Some of the Statements of Mr. Edward Atkinson. William A. Hammond.
68.— Anesthesia: Nitrous Oxid; Ether; Chloroform. S. Ormond Goldan.
69.—*New Industrial Position of Woman in its Relation to Health and Vigor. Mary Jordan Finley.
70.—*Observations on the Typhoid Fever Epidemic in Southern Camps, and its Treatment. Joseph F. Chmelicek.
71.— Nasal Polypus Weighing an Ounce, and Three Inches and a Quarter Long, Springing from the Septum Nasi of a Child of Twelve. H. R. Coston.
72.— Case of Puerperal Septicemia. Stephen J. Maher.

Medical News (N. Y.), August 5.

73.—*Ocular and Orbital Symptoms of Lesions of Frontal Sinus. Robert Sattler.
74.—*Some Salient Points in the Treatment of Hip-Disease. B. E. McKenzie.
75.—*Vaginal Colpotomy in the Treatment of Pelvic Disease. James H. Glass.
76.—*Treatment of Incipient Laryngeal Cancer. W. Scheppegrell.

Boston Medical and Surgical Journal, August 3.

77.—*Treatment of Acute Diarrheas of Infancy. John Lovett Morse.
78.—*Hygienics of the Skin. L. D. Judd
79.—*Hernia Following Operations for Appendicitis. Francis B. Harrington.

Philadelphia Medical Journal, August 5.

80.— Sketch of Century's Progress in Medicine and Surgery. J. Ward Cousins.
81.—*Otitis Media and Earache in Lobar Pneumonia of Children. J. S. Meltzer.
82.— Susceptibility and Immunity. D. H. Bergey.
83.—*Contribution to Study of Menstruation and Pregnancy in Nursing Women. S. M. Brickner.
84.—*Report of Case of Typhoid Fever; with Perforation, Operation and Recovery. Najeeb M. Saleeby.
85.— Heat versus Fever. Frederick W. D'Evelyn.

Medical Review (St. Louis, Mo.), August 5.

86.—*Report to the Investigating Committee upon the Chicago Drainage Canal. Max C. Starkloff.

Maryland Medical Journal (Baltimore), August 5.

87.—*Gunshot Perforation of Intestines. J. M. Spear.
88.—*Accidental Uterine Hemorrhage. V. M. Reichard.

Cincinnati Lancet-Clinic, August 5.

89.— Skin-Grafting by Thiersch's Method. Edward P. Adams.

AMERICAN.

1. See abstract in JOURNAL, May 20, p. 1116.
2. Ibid, p. 1117.

3. **Parotid Extract in Ovarian Disease.**—After noticing the experiences of Shober, Mallett reports and analyzes some twenty cases in which he has used parotid extract for ovarian disease, and his summary does not attempt any physiologic explanation of the action of the parotid gland, but simply states some of its effects as he has observed them. 1. It has seemed to relieve the pain of dysmenorrhea in all cases, without regard to alleged causes and present conditions, to a greater extent than any of the numerous so-called uterine sedatives which he has been able to obtain. 2. It relieves those dull, aching pains referred to the back and ovarian regions, usually designated by those familiar, though vague and unsatisfactory terms "reflex pains, neuroses, ovarian neuralgia," etc. 3. Menstruation, when deranged, becomes more regular as to periodicity and less in amount and shorter in duration. 4. During its exhibition pelvic exudate seems to soften and become absorbed more rapidly under abdomino-pelvic massage. 5. The general health, strength, appetite, and spirits seem also to improve under its use, and those dull headaches, which constitute such a persistent and annoying symptom in these cases, are almost invariably

relieved and in some disappear entirely. 6. The only counter-indication that he has thus far met in its use has been in cases of the artificial climacteric, in which cases the flashes of heat and cold were distinctly made more frequent and severe. In concluding his paper he remarks on the decreasing birth-rate and the importance of conservative treatment of ovaries and tubes.

6. **Hour-Glass Constriction of Membranes in Labor.**—Tucker calls attention to this complication of the first stage of labor, and reports five cases which he finds due to six factors; namely: partial opening of the cervix; resistance to further opening; non-engagement of the presenting parts; separation of the choroid; toughness of the membranes, and uterine contraction. The diagnosis of this condition, if its possibility is kept in mind, ought to be made with certainty and it is of importance as enabling us to guard against too early rupture of the membranes and the unpleasant consequence of a dry labor.

8. **"Christian Science," Divine Healing and Osteopathy.**—Bullard shows up the character of these frauds very fairly, quoting from osteopaths themselves to show that they admit that their sect has no reason for existence except the financial one, the ability to extract money from their gulls.

9. **Radical Cure for Hernia.**—Wills describes and compares the various methods, viz., when the sac is not removed but used for a stop gap, or reinforcement (Kocher, Duplay, McEwen); 2, when the cord is allowed to remain in the canal, the walls being re-formed before and behind by peculiarly placed sutures (Bassini, Lucas-Championniere); and 3, entire obliterations of the canal, the cord being lifted out entirely and brought out higher up than the internal ring, through the muscular tissue, and left outside in subcutaneous tissues (Halsted, Fowler, and others). He then gives his own results. In his former series, reported two years ago, he used Halsted's method in all cases but one, and had two relapses. In the present series of fourteen cases he used Halsted's once, Fowler's transperitoneal method twice, and Bassini's method nine times. Two died; the rest have all done well. Each case was treated by the method that seemed best adapted to it. Wills believes that over-preparation of the skin about the groin, by lessening vitality, is responsible for some infection by the white skin germs whose home is in the follicles, and that interrupted s. w. g. sutures draw this down into the wound where moisture and heat favor their exciting suppuration. The subcuticular suture lessens this danger. He does not especially favor the use of rubber gloves, and has had better results since he began, a year ago, to place a rubber drainage-tube in the lower angle of the wound. He admits that this looks like partial aseptic failure, but the result is what is aimed at. The method of operation is a matter of choice, but there is danger in ligating the sac neck in that it leaves a dimple on the peritoneal side, and this receives the impact of the bowels and favors a relapse. He has been in the habit of ligating the sac neck by transfixion with double suture, and with two long ends of the suture, drawing the ligated neck as far up as possible behind the abdominal wall and suturing it there, bringing out the sutures and tying outside of the aponeurosis of the external oblique muscle, fixing the dimple against sound muscular wall, thus preventing downward pressure on it and bringing a relapse. This plan has served him well. He keeps his patients in bed four to six weeks, and makes them wear a spica bandage for a month or more, but never a truss.

11. **Prevention of Conception.**—King has taken pains to collect the opinions of physicians and clergymen, Catholic and Protestant, on this subject. He finds that Catholic clergymen are almost unanimous against these practices, and physicians generally of the opinion that while they may be socially dangerous and condemnable, they are not necessarily dangerous to health, and are advisable in certain cases. He combats the Catholic view, supporting himself on physiologic and ethical grounds and by scriptural references. In conclusion he specifies the conditions on which he thinks physicians may select, and prescribes some methods of prevention, viz.: 1. When conception would prove dangerous to the mother; 2, when the child would inevitably inherit serious and incapacitating disease; 3, when the parents are obviously unable to afford the child reasonable food, raiment and care.

12. **Rational Diagnosis.**—This paper is the annual address on medicine before the Wisconsin State Medical Society.

13. **Influenza Pneumonia.**—Holbrook, first stating that reliable statistics show that within the Lake Michigan region, out of every hundred deaths from influenza, fifty are due to complicating pneumonia, remarks that a large number of these pneumonias conform to no frank type of the disease, but present symptoms not described in the text-books or taught from college platforms. Although it has lately been somewhat the subject of writings and discussion, there is yet much to be done for the better understanding of the pneumonia that follows la grippe insidiously, with a pulse not above 90, temperature below 100, respiration of 25 to the minute, and no lancinating pains, cough or expectoration, and with physical signs too obscure for diagnosis, and is yet a pneumonia that may eventually consolidate the lungs and be one of the most dangerous forms of this dreaded disease. As to the etiology, it is certainly due to the toxins, but just how is not entirely explained. The most probable theory is it causes, through the nerve-centers, a passive congestion. The bacilli of influenza and pneumonia are generally present, but as to whether the pneumococcus is essential there is a difference of opinion. After noticing the classification of grippal pneumonia of Lemoine, and stating that the symptoms are not constant with it, he reports a case which he offers as a type of atypical pneumonia of influenza. The treatment is that of other pneumonias, with special care during the convalescence. The prognosis is generally given as bad. Following a depressing disease, it is a serious form, but other things being equal, there is not so much difference between it and other pneumonias in this respect, except the greater likelihood of a slow recovery and serious complications. He calls attention in conclusion to the importance of a correct diagnosis, repeated chest examinations, and painstaking study of the case.

15. **Labor Complications.**—Dobbins' paper is to be continued, and can better be noticed when complete.

16. **Tolerance of Pregnant Uterus.**—Anderson reports a case in which he was called on to operate for vesicovaginal fistula. He found laceration of the cervix, which had extended, involving the bladder wall up to very near the angle of the right side. He operated and succeeded in pulling the uterus down far enough to pare the edges and close the bladder opening and perform trachelorraphy. The operation seemed to him unsatisfactory, but he introduced a drainage-tube into the uterus, irrigated the bladder with a boric acid solution, and, after a time, on examination, found that he had had perfect results. Before dismissing the woman, wishing to satisfy himself that the cervix was pervious, he had her taken to the operating room and introduced a sound into the uterus. The operation was performed Dec. 15, 1898. Menstruation had been irregular, the last having been November 25. Everything went smoothly along for some time, when he was informed that she was developing a tumor, and she was brought back to be examined. He found her seven months pregnant, so that trachelorraphy had been performed, drainage-tube introduced into the uterus, the uterus had been sounded, all during the early stages of pregnancy, and yet without producing abortion. All the data he can gather show that the woman was two months pregnant at the time of the operation.

18. **Diagnosis in Obstetrics.**—The previous installment of Ayers' communication was noticed in the JOURNAL of July 8, par. 8, p. 93. This one considers: The fetal body, movable and fixed; the highest point reached by the body in right, left, or middle of fundus; anterior lateral position, etc.

19. **Renal Tumors.**—After noticing the various forms of renal neoplasms, Weber remarks on the signs and symptoms, and says the growth and enlargement is the most constant sign; it always occupies the lumbar region except in rare cases of movable kidney. Lying between the ribs and iliac crest, it extends forward into the abdomen; the fingers can not be got behind it, and there is no resonance between the tumor and vertebræ. Distinct bulging from behind is rare. The tumor usually retains the renal outline more or less. It may be somewhat nodulated, but never presents distinct notches like the spleen. The colon is invariably found in front or by the side of it, and it is very rare not to have the bowels in front of the kidney tumor. When on the right side, the cecum and

ascending colon may be displaced inward, and on the left side it may extend forward and inward, pressing the descending colon to its outer side, though it will be more frequently found on its anterior surface. The colon is practically never found in front of an enlarged spleen, and only rarely overlaps an enlarged liver. In some instances the tumor has been observed to leave its position and float forward in front of the small intestine, and may then be readily mistaken for an ovarian tumor. Renal tumors are found slightly mobile on palpation, as well as by the act of inspiration, and a deceptive sense of fluctuation is sometimes obtained. Hematuria, when nephritis or disease of the bladder and urinary tract can be excluded, is a very important symptom, is said to occur in 50 per cent. of cases, and is more common in adults. Sometimes it is the first sign; in a few it persists throughout the case. In many cases it is intermittent, or it appears only near the close of the history. Pain, from a dull ache in the loin to severe, lancinating, colicky pain extending to the bladder, has been observed, but too much importance must not be given this symptom. The examination of urine is not generally of great value. The diagnosis is made largely by exclusion, and Weber gives the following points in regard to this: 1. By recent observations it is shown that degeneration and neoplasm of the suprarenal bodies occur more frequently than was formerly known: tumors starting in the suprarenal capsules primarily might in some instances have been diagnosed as renal tumors; when they are of considerable size it will be next to impossible to say whether the corresponding kidney be involved or not. 2. Perirenal lipomata may grow to enormous size, filling out the greater part of the abdominal cavity; dropsy, emaciation of the body and cachexia follow in the course of time. 3. Omental tumors are flattened, cake-like, and may be often palpated as a band or elongated mass passing transversely across the abdomen. 4. Mesenteric tumors, either cystic or solid, are generally round and freely movable; their prominent part is near the umbilicus; there is resonance all around them; urinary symptoms are absent. 5. Peritoneal growths, peritonitic abscess and induration, cystic and tubercular kidney may come up in the question of differential diagnosis. 6. Gumma of the kidney weighing up to one pound has been reported, may also be the seat of a growth. Hydatids may Israel. A case of syphilitic cirrhosis closely resembling tumor has been reported by Kelynack. 7. Hydronephrosis, pyonephrosis, nephritic and perinephritic abscess and renal calculus will be associated with renal colic and show important symptoms in the urine, such as blood and pus, which will assist us in diagnosing them. 8. Movable kidney, it is to be remembered, may also be the seat of a growth. 9. Hyatids may be deceptive when retroperitoneal; hydatid tumors of liver, projecting tongues of liver may present considerable difficulty when we try to eliminate the presence of renal tumor. An enlarged gall-bladder will be pushed upward and more prominent when the colon is inflated. A movable kidney will be pressed back into the loin under the same circumstances. 10. Splenic enlargements; no intestine in front, notched border, resonance between it and the spine. Ovarian and uterine tumors, and fecal impaction have also to be eliminated. The "phantom" tumor of the abdomen may readily simulate a number of abdominal disorders; considerable swelling of the abdomen is often noticed secondary to pelvic and other inflammatory conditions of the abdomen.

Having diagnosed a renal tumor, it is well to bear in mind that our knowledge of the biology of these growths at the present time is too limited to allow of our making a definite diagnosis as to their structure and essential nature during life. We may, however, safely make the following statements: A rapidly increasing growth of the kidney is almost always of a malignant natûre. The forms usually met with in infant life are sarcomata; adenomata occasionally occur in early life, but do not often produce secondary deposits. In adult life almost any form of growth may develop; carcinomata are particularly limited to adults. The various forms of cystoma especially belong to adult life; sarcomata do occur, but much more rarely than in the young; malignant suprarenal and perirenal tumors are generally met with in adults alone. Weber reports four cases.

21. **Diseases of Children.**—In Caillé's report, cases of the following are considered: incontinence of urine; convulsions of reflex origin; acute emphysema; muscular insufficiency; eczema, and apex pneumonia.

22. **Pneumonia and Typhoid.**—Gradwohl, noticing an incorrect usage of the terms typhoid pneumonia, pneumonia typhus, etc., points out the three varieties which he thinks ought to be recognized: That form in which with croupous pneumonia there are marked typhoid symptoms without gross intestinal lesions and Widal reaction. Here we find a true croupous pneumonia with marked toxemia and severe general symptoms, but bearing no relation to the specific attack of typhoid. This has been called by misnomer, "typhoid-pneumonia." There is also a form called by the French and Germans, "pneumo-typhus," characterized by sudden onset with symptoms of lobar pneumonia, and after the crisis we have the symptoms of typhoid fever. This is a mixed infection of pneumonia and typhoid. There is also a third variety which has been recently described by Fränkel,in which pneumonia signs appear after the appearance of typhoid symptoms. Fränkel divides this into three groups: 1. Cases of pneumonia accompanied by typhoid symptoms, irregular fever, and diarrhea, coma, etc. In these cases, if the consolidation is central and the physical signs obscure, the diagnosis becomes very difficult. 2. In the second group he places those cases of frank lobar pneumonia which arise in the course of typhoid fever. They are extremely rare; he has seen but six in over 500 cases of typhoid fever. 3. Those cases where, in the course of typhoid fever, a pneumonia caused by the Eberth bacillus is set up. Fränkel says that pleuropneumonia often develops in the fifth week of typhoid, and that aspiration will evacuate a purulent exudate containing the bacillus typhosis in pure culture, and autopsy later will reveal the interstitial pneumonia. Gradwohl reports in full a clinical history, post-mortem and bacteriologic findings of a case of this third category of Fränkel. He closes his paper with remarks on differential diagnosis of the bacillus coli and typhus bacillus, with special mention of Hiss's culture-method for their distinction.

24. **Silver Salts in Ophthalmology.**—After noting the testimonies of various authorities in regard to protargol, Renaud gives his own experience. He finds it decidedly beneficial in catarrhal conjunctivitis, but slow in action in the gonorrheal form, though reliable and satisfactory in every respect. He has not found it satisfactory in trachoma. It worked well in chronic conjunctivitis and corneal ulcers.

25. **The Tuberculin Test.**—Otis' article first notices the fact that the test has been objected to, that in certain cases the reaction is not reliable, and suggests that above a certain dose, maximum to the individual, what at least stimulates a general reaction may occur in a healthy individual from temporary poisoning by the tuberculin. His observations are extended over 111 cases, and his results up to the last year were published in the *Medical News* of July 9, 1898. He adds them to the figures for this year. Out of 56 cases of unselected cervical adenitis there were 33 reactions, 6 slight reactions and 2 doubtful. Throwing out the slight and doubtful, we have 58.9 per cent., including them, 73.2, or an average of 65 per cent., indicating the proportion that were tuberculous. He compares these with the results of others and thinks it probable they are correct. In eight cases of syphilis and one doubtful one, there were 4 reactions. There does not seem to be any doubt that a certain portion of such cases will react. In 6 cases of more or less advanced pulmonary tuberculosis, bacilli and sputum, three gave no general reaction after 10 or 12 mg., and one none after 5 mg. It would appear, therefore, that the pulmonary tuberculosis when more or less advanced will not give a general reaction from 5, 10 or 12 mg. of tuberculin, and he calls attention to the fact that in advanced cases the reaction may be slight, while the reverse is true in any case. He summarizes his conclusions as follows: 1. The tuberculin test indicates early tuberculosis by a general reaction in the majority of cases, before it can be detected by other methods, the X-ray excepted. 2. The dose to accomplish this is from 5 to 10 mg. of Koch's original tuberculin. 3. No injurious results occur from the use of tuberculin in these doses. 4. Proved tuberculosis in a more or less advanced stage may fail to give a general reaction with doses of from 10 to 12 mg. 5. Syphilis gives a reaction in an undetermined proportion of

cases. 6. A non-tuberculous person may give a general reaction with a dose above the maximum used in the test. 7. The reaction may be delayed from six to twenty-four hours. As rules to be observed in making the test: 1. Always use the same tuberculin and of a standard strength. 2. Use aseptic precautions in giving the injection. 3. Make the injections deep into the muscles. 4. Keep a two, three or four-hourly chart of the temperature if possible, beginning twenty-four hours before the injection. 5. Allow several days to elapse before repeating the test. 6. In early cases depend on the general reaction; in later cases, if the general reaction is wanting carefully look for the local.

26 and 27. **Diagnosis of Early Phthisis.**—Barbour asks, "Can the early stages of pulmonary tuberculosis be diagnosed with reasonable certainty without diagnostic injection of tuberculin?" and he answers, "With reasonable certainty, yes." The earliest physical signs in the respiratory murmurs being percussion notes, pleuritic friction sounds, and sometimes moist or dry rales, in very limited areas, may often be detected before bacilli can be found. One can also be helped by the family and personal history and clinical symptoms. The clinical history of phthisis is variable, as much so in the early as in the late stages. A slight cough of insidious onset continued over two or three months, hemoptysis, and pleuritic pains are quite suggestive. Slight rise of temperature, failure of digestion, etc., are all of value as aiding the expert to diagnose early tuberculosis. He cautions, however, those not practiced, against using tuberculin as a diagnostic aid, as it has dangers that can be avoided only by the expert and cautious. Denny's article covers much the same ground, noticing, however, in addition the signs of the pulse and the X-ray revelations.

28. **Joint Tuberculosis.**—Young's paper considers the two symptoms most positive in joint tuberculosis to be spasms and atrophy, and he gives a contrasted statement of the principal signs of non-tubercular chronic synovitis; tubercular, chronic, articular arthritis; and specific syphilitic arthritis. Beyond those already mentioned, the points he gives for tubercular disease are the lack of fluctuation, and the non-thickening of the capsule, the acute pains on motion, and the night cries.

29. **Watery Extract of Tubercular Bacilli in Phthisis.**—Sutherland reports his own case and his treatment, by Dr. von Ruck, with the watery extract of tubercle bacilli, and reports twelve cases of his own practice. He has had, in the past year, five cases of unmistakable tuberculosis in which there has been an apparent recovery. He cautions physicians and patients, about trusting too exclusively to climate, which he thinks has, perhaps, less value than is commonly supposed.

30. **Local Treatment of Lung Diseases.**—Lyle advocates the use of local treatment of the lungs, and describes the method as used by him. The remedies are introduced in a state of minute subdivision by inhalation. The objections to this method, he thinks, have been more theoretic than practical, and are not borne out in practice.

39. **Cancer of Stomach.**—This address by Dr. Bernays, we believe before the Oregon State Medical Society, takes up the now familiar subject of cancer and its cure. He is in favor of operative treatment whenever possible, and his opinions are summed up in the following conclusions: "Knowing that cancer is incurable if totally extirpated, and knowing that it is fatal if not totally removed, I have arrived at the following method of dealing with patients who seek aid from me when they are afflicted by a cancer. 1. When the case is clearly curable, and the danger is slight, then I feel it my duty to urge the operation, and insist on an immediate performance of the same, and represent the prospects of a cure as highly favorable. 2. When there is considerable involvement of the lymphatics I do not strongly urge the operation, but tell the patient that the chance of a cure, though small, still exists, and in fact feel it a duty to make the attempt at a radical extirpation. 3. When the danger of an operation is very great, but where I still think the removal of all involved tissues can be completed, I mean by that where the operation is anatomically thinkable, I present the grave dangers of an immediate death on the operating-table, and though holding out but little hope of a cure and only probable prolongation of life, I still give enough encouragement to inspire the patient with some expectations of being benefited. As a rule, I find that these patients will decide to have the operation done. 4. Finally, in anatomically impossible cases I do not think it is justifiable to refuse to operate in some fashion if, after knowing the truth as to the hopelessness of the condition, a patient demands that an operation be done. In these cases the psychical effect of even an imperfect partial removal of the offensive cancer sometimes is very beneficial, and puts off for months the inevitable morphin syringe, which we are compelled to use during the last weeks." The latter part of Bernay's paper treats of cancer of the stomach, in which he reviews the experiences of others before stating his own. Out of 21 resections he has had only 2 deaths immediately following the operation. All of the others were benefited, and one lives from whom he removed a pyloric cancer as large as a child's head, seven years ago; thirteen died within a year, from return of the cancer, and seven lived from one and a half to four years; two of these are still in good health. He concludes by saying that should a few cases be radically cured, and twice as many killed by the operation, they would have derived more benefit than if none had been operated on. Those who are killed by the operation are saved from a most horrible slow death.

41. **Tobacco.**—Marable's presidential address is especially on smoking, and goes at considerable length into the literature of the subject. He believes that tobacco in any form is very bad for the growing boy, and especially the practice of cigarette smoking.

42.—See JOURNAL, June 17, par. 74, p. 1382.

43. **Bright's Disease Caused by Pregnancy.**—Ezell reports a case of acute dropsy with urine loaded with albumin. The woman was 21 years old, and three months pregnant. After numerous tappings she was somewhat relieved by the use of elaterium, the only drug which seemed to be effective, but after confinement this also proved inefficient. The patient died about eight or nine weeks after confinement, in convulsions. His diagnosis was acute Bright's disease, superinduced by pregnancy; he asks as to its correctness.

44. **Comatose Malaria.**—Norris describes comatose malaria, which is the most common form of pernicious malaria in temperate climates. The coma may develop suddenly, as in the apoplectic form, or the patient may fall asleep and deepen into profound unconsciousness. The coma, if not fatal, may last twenty-four hours and the temperature falls, the skin becomes moist and consciousness returns. The diagnosis is as a rule easy, but it may be confused with apoplexy, insolation and uremic coma. The microscopic examination of the blood and discovery of the parasite is the surest method. He is inclined to agree with Thayer that exposure to the sun may tend to determine the cerebral accumulation of the parasites. The treatment is with the specific quinin, and he gives it in 15-grain doses, hypodermically, in the form of the bimuriate of quinin and urea, and repeats the dose in four or five hours. If the pulse flags, he gives strychnin and digitalis, also hypodermically keeps the bowels well open, and watches the action of the bladder, catheterizing if necessary. He reports three cases.

45. **Foreign Bodies in Lungs.**—By compilation of recorded cases it is shown that the mortality attending the entrance of foreign bodies into the lungs through the air passages is about 34 per cent. when they enter by direct penetration—as bullets, etc.—other conditions being equal, there is less apt to be serious disturbance than when a bronchial tube is blocked. When a foreign body has entered the bronchiole through the trachea, in about 57 per cent. of cases it has been spontaneously expelled with favorable results. There seems to have been no special predisposition toward phthisis following the lodgment of foreign bodies in the lung, any more than after other chronic irritations of the organ. The chance of bodies becoming encapsulated when entering the lung through the air-passages is slight, but when they result from direct penetration, Wood has experimentally proven that encapsulation may take place, but the formation of a fibrous envelope would be very slow owing to the scantiness of fibrous tissue, and such fibrous tissue is always poor in its blood-supply, and is to be considered a *locus minoris resistentiae*. From his experiments he corroborates

the theory that infarction in the lung will not take place without there be predisposing disease of the lung or circulation.

46. **Sterilization of Living Tissue.**—Bleyer advances the theory that ozone is generated in the blood, and then almost immediately transformed into H_2O_2, which would coagulate the albuminous matters, and partly with the oxyhemoglobin, probably forming a compound which he calls *peroxyhemoglobin*. He has been able to appreciably increase the amount of ozone in the blood by passing weak currents of galvanic electricity through the body. It is probable that as the current passes through the blood, it decomposes the chlorids, which are normal constituents, forming hypochlorites or some highly oxidized compounds of chlorin. He considers these theories strengthened by the results of his treatment of tuberculosis by electric stimulation during the past few years; no report of cases is given.

47. **The Patient's Secret.**—According to the law of New Jersey, there can be no hindrance to the extraction of any testimony from a physician; the judge deciding that the testimony is pertinent, the physician is then compelled to respond, it may be to the extent of disclosing all of his patient's confidences. In half our states and territories are statutes exempting the physician from giving testimony of personal matters revealed to him by the patient in his professional capacity. Lack of uniformity marks the laws of the various states, but the majority exclude such testimony in the civil courts alone, while in New York and some other states the law applies to criminal courts also. The lesson Strock draws, after discussing the subject at length, is that a physician called to give testimony in a case that may disclose by probing a professional secret, should first ascertain the patient's wishes in the matter, and if testifying in a state where the law provides for his protection in case he refuses to answer on the ground of "privileged communication," should cautiously answer all direct questions, for fear that he make it possible for a disclosure of this secret on subsequent cross-examination. In giving testimony of such a nature as is calculated to injure the patient's character, a clear understanding is first to be had with the patient, and in case of his demise, the immediate family should always be consulted and their permission obtained. And it is urged that medical societies in such states as do not provide legal protection to the physician guarding his patient's secret, should combine and take action necessary to secure proper modification of the laws relative to this subject.

48. **Fractures of Extremities.**—Some interesting variations from existing statistics are noted; 349 of these fractures were of the upper extremities, while but 151 occurred in the lower. Fractures of one or more metacarpals were found in a proportionally large number of cases (51), due both to direct and indirect violence; in the difficulty frequently attending the late examination of these fractures the value of the radiograph was enhanced. Attention is directed to possible fallacy in reading the radiograph in supposed epiphyseal fractures, the normal epiphyseal line being frequently mistaken for a fracture. Exception is taken to the accepted rule that fractures of the shaft of the long bones are apt to be more oblique than transverse; the radiograph shows the contrary to be true. A large number of drawings in outline are reproduced from the original negative.

49. **Primary Sarcoma of Nose.**—The cases reported by Thomas are 5 in number, 3 in males, and 2 in females; the ages ranged from 27 to 59 years. Early symptoms were nasal obstruction and hemorrhage. One was found to be an adenosarcoma, 2 were of the spindle-celled variety, one had the structure of a myxosarcoma, while the other was made up of small round cells. Degeneration of nasal polypi are cited as an important etiologic factor in the various forms of nasal sarcoma. The site of origin is more commonly the cartilaginous septum.

51. **Hemoglobin in High Altitudes.**—Averaging his observations in 69 cases recorded by Bergtold within three weeks after their arrival at Denver (5200 feet), he finds the blood's sp. gravity to be 1.059, which is exactly the average of sea-level individuals; after a residence of three weeks or more in Colorado, he finds the specific gravity to be 1.064, and allowing 5 per cent. for each degree above 1.059, the hemoglobin normal at Denver altitude is to be considered 125 per cent.

53. **Thyroid in Cerebral Neoplasms.**—Evidence of the presence of a cerebral neoplasm was based on the symptoms of constant, increasing headache, gradual impairment of vision, indistinct outline of optical discs, with beginning atrophy. On the supposition that he had a glioma to treat, Loving administered the extract of thyroid for a period of five months, with the result of relieving all symptoms. The ophthalmoscopic examination demonstrated a marked improvement in the condition. The patient subsequently used his eyes at very exacting work, without recurrence of symptoms.

54. **Modern Veterinary Practice.**—Reynolds describes the methods of education in veterinary medicine, the social position of the veterinarian, which he thinks depends entirely on himself, the rewards of practice, and its importance in the field of public medicine.

56. **Ventrosuspension of Uterus.**—After discussing the indications and operations for retrodisplacement of the uterus, Eggers closes his paper with the following conclusions: 1. There are three operations for retrodisplacement which need to be taken into account, viz., Alexander's operation, or extraperitoneal shortening of the round ligaments, Wylie's operation, or intraperitoneal shortening of the round ligament, and ventrosuspension, according to Dr. Kelly's method. 2. In cases of retrodisplacement without adhesion, where the uterus can be lifted up, but where no relief is obtained by medical treatment or by pessary, Alexander's operation is to be performed. 3. In cases of retrodisplacement with adhesions, where laparotomy has to be performed to loosen the adhesions, ventrosuspension ought to be preferred if both ovaries are extirpated. If one or both ovaries are left, the choice will be between ventrosuspension and Wylie's operation, with a possible preference for Wylie's, as it is impossible, even with Kelly's method, to be perfectly sure that the adhesions will be yielding enough to permit normal pregnancy and labor, while no such objection can be made against Wylie's operation. Still, the choice here might be individual with the different operators. If there are numerous very strong adhesions, leaving the posterior surface of the uterus very raw, hysterectomy would be indicated if the appendages have to be removed to avoid the danger of adhesions forming between the bowels and the denuded surface of the uterus. 4. In cases of complete prolapse, ventrosuspension is indicated.

60. **Tubercular Osteomyelitis.**—The object of McLean's article is to urge the importance of early diagnosis in tuberculous bone disease. After remarking on the pathology, methods of attack, and noticing that tubercular infection especially affects the epiphyses, because of the minuteness of the vessels in these parts, and the constant cellular change, he states that it seems natural that the bacilli should prefer the vertebræ and the head of the femur where several such unions are going on at the same time. We would not expect a primary focus in the femur after the twenty-first year, for the changes are complete at that time, while we might expect such in the vertebræ up to the twenty-fifth year. The nearer the center of circulation the focus is located, the more rapid will be its growth. The general condition of the patient does not always indicate bone tuberculosis. There may be no impairment of the general health and pain; the first symptom may be referred to some distant point, as in hip-joint disease it is frequently located in the knee. Tenderness is not marked until the bone begins to soften. If an area of tenderness can be detected around the epiphyseal line and no pain on movement of the adjacent circulation, disease of the bone may be suspected and both extremities should be carefully examined. Swelling does not occur until the compact layer is perforated and the periosteum bulges. Redness does not appear until the disease extends toward the surface. Atrophy of the limb is an important symptom and appears early. In disease of the vertebræ before puberty, it is usually confined to the bodies of the vertebræ and the first symptom detected is frequently the attitude and the effort to avoid vertebral motion. Little or no pain can be detected by pressure on the arches, but sudden jars elicit it. In young adult life, when the arches are affected pain can be elicited by pressure. The only difference in the symptoms of a primary bone and primary synovial affection is tenderness over the epiphyseal margin. The ther-

nometer is frequently a great aid, as any tubercular affection has its evening rise of temperature, though it may be very slight. In all cases the family history should be inquired into, and a careful search be made for lesions elsewhere in the body. The exploratory or aspirating-needle may be used, the bone having become softened and easily perforated, this being also a diagnostic point. Ignipuncture has been recommended, and is performed with a heated needle point of a Paquelin cautery, and has a therapeutic as well as a diagnostic value. Treatment is constitutional, mechanical and operative, the latter when the bones of the extremities are affected. To obtain benefit from constitutional and mechanical treatment an early diagnosis is of greatest importance. It is easier to prevent spinal curvature and deformity than to cure it, and a plaster-of-paris splint or braces properly applied, with good hygienic measures and surroundings and the use of constitutional remedies, will terminate many cases favorably.

61. **Modern Medical Text Books.**—Mapes criticizes the multiplication of modern text-books, many of which he thinks are useless and altogether superfluous, and merely compilations without any thing new. The illustration he gives is that of a modern author on surgery, who has had the audacity to introduce a chapter on hydrophobia which Mapes says is not entitled to be classified in the category of surgical diseases, or even as a disease at all, the arguments of nearly every medical and surgical authority notwithstanding. The bulk of his paper is taken up with extracts on this disease.

62. **Nuclein in Tuberculosis.**—Wellington reports four cases of tuberculosis treated with nuclein, two of which seem to be greatly improved and one completely cured, though in neither case was there any examination for bacteria after apparent recovery.

63. **Gruel in the Feeding of Infants.**—This paper gives the results of certain experiments made by Chapin as to the effect of diluting cow's milk with decoctions of cereals. The experiments were made *in vitro* and upon a healthy dog with a previously prepared gastric fistula. The result showed that the additions improved the digestive quality of the milk not only in attenuating the casein but by also increasing the nutritive value of the food. The proper addition of gruels to milk will not infrequently prevent wasting in bottle-fed babies who are losing flesh. The large proportion of lactose, a carbohydrate, in human milk shows the desirability of this food principle in the growing infant. Apart from the experiments, the clinical test is the real one as regards the value of this product. Chapman maintains that the common opinion that infants should not be given starch in any form is incorrect except as regards excess. The youngest infant can tolerate and digest a small amount. The paper goes into details as to preparation of infant's food.

64. **Angioneurotic Edema.**—The purpose of Onuf's paper is to show from the seven cases which he reports, the close relation of angioneurotic edema to urticaria, certain forms of erythema and other disorders which may be considered as due to disturbances in that part of the nervous system presiding over the vegatative functions in the organism. He analyzes these cases in detail as to their etiology, finding that neuropathic and psychopathic taint is the most prominent predisposing cause, while psychic influences are the most prominent exciting cause. The symptoms are reviewed in detail and the diagnosis between these disorders and mechanical local edema, hydropic edema, hysterical and blue edema, myxedema, insect bites and erythema nodosum. The treatment seems to be chiefly in a general tonic nature, and a tranquillizing action on the nervous system. More attention will have to be paid to the questions of rheumatic and lithemic diatheses. He thinks the cases reported demonstrate convincingly the affinity of this disorder with urticaria and fugitive neurotic edema. There is also a great resemblance to the so-called enteritis tubulosa or membranacea, except that here secretory innervation appears to be mainly disturbed, while in angioneurotic edema the alteration chiefly affects vascular innervation. If we consider further the tendency to coexistence with angioneurotic edema of nervous angina pectoris, anomalies of menstruation, or other disturbances, whether of vascular or of viscero-motor or of a secretory innervation, either in the same individual or in his family, the following conclusion suggests itself:

Certain individuals are especially predisposed to disease of that division of the nervous system which presides over the vegetative functions of the organism. This special predisposition may be only individual or it may be hereditary. In either case it may extend over several vegetative functions or over one in particular. Thus one patient may show predisposition to disorders of vascular innervation only; in another patient, if he suffers from asthma for instance, viscero-motor innervation may be exclusively disturbed; or several vegetative functions of the nervous system, such as vascular, cardiac, and secretory innervation, may be involved in the same patient. In some cases finally the predisposition mentioned might produce the symptom complex known as Basedow's disease.

The author mentions in conclusion that what he has called viscero-neurotic taint, the predisposition to disorders of the vegetative functions of the nervous system, is frequently associated with a general neuropathic or psychopathic taint.

65. **Reflex Cough.**—Richards discusses the cough due to nervous reflex from various sources pointing out the anatomy of the nerve-supply of the larynx and giving the diagnostic points between nervous and respiratory cough. These are chiefly as follows: Sudden appearance; rhythmical character; free intervals when no signs of cough are present; expectoration absent or slight in amount; no fever or marked constitutional disturbance; may continue for years or stop at any time, or eventuate in other symptoms; may come at regular intervals; stops when person's attention is fully occupied; is most marked when the patient is under observation; if stopped for a time begins with an explosion; is usually absent at night, always if purely nervous; absence of physical signs in respiratory tract; cough apparently a useless one, does not accomplish anything; patient complains of usual symptoms of catarrhal cough in the respiratory tract; its tone is various, sometimes hacking, bellowing, shrill, croupy, metallic, at other times hoarse from insufficient cord tension. This latter is an imperfect cough, and according to Professor Gardner is somewhat distinctive of thoracic tumors or aneurysm pressing upon the recurrent laryngeal nerve. Its chief features are hoarseness and imperfect explosion; it is a noisy, not infrequently harsh, brassy cough. The diagnosis is often difficult. He then enumerates points from which reflex cough may be excited; the central nervous system, as in glottic spasms which commonly issue from the cortical centers, uterine and visceral coughs, ear and nasal cough, and those due to direct pressure on laryngeal structures. Cases illustrating these are reported. The therapeutics of these cases depends on diagnosis. This once accurately made, the treatment is readily adaptable to the individual.

66. **Traumatic Neurosis with Pharyngeal Hemorrhage.**—Von Adelung reports a case of a woman who was jerked from a moving train, suffering severe mental and physical shock and had an immediate uterine hemorrhage. Has since that time had various symptoms of a hysterical traumatic neurosis and pharyngeal hemorrhages, occurring at first two or three times a week, and latterly only about once a fortnight. The previous history was not neuropathic. He speculates on the cause of these hemorrhages, and notices the observations of Laurent of similar cases. He suggests that there may be some molecular change in the nerve centers accounting for the dilated condition of the blood vessels at the base of the tongue and their occasional rupture.

67. **Soldiers and Venereal Diseases.**—Hammond remarks on the statements of the prominent anti-imperialist, Atkinson, and shows his errors as regards the American soldiers and the conditions in the Philippines.

69. **The New Industrial Position of Woman.**—Dr. Finley claims that the enlargement of the duties and life pursuits of women will tend to greater physical vigor and mental health and the perfection of the race.

70. **Typhoid Fever in Southern Camps.**—Chmelicek describes the conditions observed by him in the camps at Tampa during the late war with special reference to typhoid as it there occurred. He attributes the spread of the disease largely to the ignorance and recklessness on the part of the volunteers and their officers. In his experience there was about 78 per cent. of typhoid fever to 22 per cent. of all other disorders. He

describes the symptoms and treatment, and concludes as follows:

1. The camp should be frequently changed.
2. The division hospital is here to stay, as only in this hospital can female nurses be employed, and
3. The proper person as attendant is the female nurse.
4. All soldiers should be educated in plain sanitary hygiene.
5. The sooner the patient takes to bed the fewer complications are likely to follow. The hemorrhagic and perforation complications develop in patients who walk until they fall, and who use indigestible food during the first stages of typhoid.
6. Milk is not suitable for every case; many of the patent foods on the market, especially "predigested" foods, must replace it in many cases.
7. Sugar used during convalescence will cause relapse quicker than solid food.
8. Every case requires especial study.
9. The severest case, with hemorrhages and other complications may get well, while the lightest case, apparently doing well, may prove fatal. Never give up a case as hopeless.
10. All the patients in the southern camps showed a remarkably low pulse-rate, even with high temperature, for which I can not offer any explanation.

73. **Ocular and Orbital Symptoms of Lesions of the Frontal Sinus.**—The recognition of lesions of the frontal sinus, their course and their treatment are discussed by Sattler, who claims that the acute disorders are quickly diagnosed but the chronic lesions are much less easily recognized. The orbital symptoms are, first, localized tenderness without redness or swelling, generally unilateral, this giving away later to transitory, painful swelling of the periosteum and bone with frequently redness and swelling of the overlying soft parts. These symptoms come and go for days and weeks, and headache may become general. At the same time there is a characteristic symptom, the change of contour of the inner, upper and sometimes even of the inferior margin of the orbit, giving rise to a change of physiognomy, pointing to an existing sinus lesion. With this there may be no serious nasal trouble. If the grade of inflammation is not high a chronic empyema may undergo absorption or thickening and terminate in a contraction of the cavity, or, in other words, hyperostosis. It may also occur that a spontaneous evacuation of the contents occurs into the nose, or the temporal angle of the sinus may give way, but this more frequently occurs at the lateral or orbital wall at points near the inner canthus of the eye. The most frequent outlet of the dissecting trail is under and at the outer or temporal border of the tear-sac. They may, however, take still other courses. With hyperostosis occurring as above stated, severe neuralgic seizures may follow as a remote result. The ocular symptoms are first noticed in the lids. A serous infiltration of the loose cellular tissues of the orbital roof depending on exacerbations of the sinus lesions may interfere with the action of the levator muscles of the upper lid and the superior rectus. Drooping of the lids and slight restriction of motion upward is often observed. Proptosis due to the same cause and lateral downward displacement of the globe may also be present even thus early. To these symptoms are added an edema of the inner third of the upper lid with dusky discolorations looking so much like the inflammatory edema of chalazion that it may lead to error. On the conjunctiva, especially the retrotarsal and ocular divisions, engorgement of the veins and chemosis are frequently observed, due to venous obstruction. In some cases the upper fornix is evulsed. Proptosis is variable, and not conspicuous even in pronounced cases. Exophthalmos is only conspicuous in exceptional cases, in which perforation takes place behind the orbital margin and the dissecting trails push backward toward the apex of the orbit. He reports a case and remarks that the surgical methods which enable us to explore the frontal sinus from without are so satisfactory that few surgeons attempt it from the intranasal opening. He uses the external method exclusively with chisel and mallet.

74. **Hip Disease.**—McKenzie concludes his paper as follows: 1. Hip disease is a local manifestation of a constitutional disease. 2. Early operative treatment is seldom justifiable. 3. When softening can be determined the surgeon should operate and obey indications, observing all care not to needlessly injure the mechanical integrity of the joint. 4. In the subsequent management of the wound asepticism and antisepticism must be carefully observed. 5. From the earliest moment efficient protection for the joint should be secured and constantly maintained by a well-fitting mechanical appliance. 6. A proper splint should fulfill two indications, i. e., secure rest for the affected joint and prevent deformity. No effort should be made to employ the splint as a crutch; ordinary crutches should be used. In the adjustment of the splint the knee should be slightly flexed. 7. Constitutional treatment is indicated as in other tubercular affections. Great emphasis should be laid on obtaining the freest exposure to direct sunshine and fresh air. Free use of iodoform is a valuable adjunct. 8. After excision a perfect recovery never follows because the mechanical integrity of the joint is not preserved. 9. Following mechanical and constitutional treatment complete restoration of function is sometimes obtained. 10. Even when breaking down of tissue occurs which necessitates incision, there is sometimes a perfect restoration and frequently a highly useful return of the joint function.

75. **Vaginal Celiotomy in Pelvic Diseases.**—Glass advocates the vaginal route in a large proportion of cases. He summarizes its advantages and disadvantages as follows: 1. A preliminary or exploratory vaginal section is always warrantable. 2. Drainage when necessary is more free and natural. 3. There is less danger of extending infection. 4. The limited peritoneal field exposed and handled reduces to a minimum pain, shock and intestinal paralysis, frequent sequelæ of suprapubic abdominal section. 5. Post-operative nausea is lessened and movements of the patient are less constrained, contributing much to her comfort and general welfare. 6. Vaginal section may frequently be performed when the condition of the patient, especially in abscess cases, would interdict any other procedure. 7. The danger of hernia through the scar is practically *nil*. 8. Recovery is quicker. 9. The mortality, as calculated from all reported cases, is materially lessened.

The contraindications for the vaginal operation are: 1. An unusually small or septic vagina. 2. Such fixation of the uterus that it can not be drawn down, or such enlargement of the organ that operations on the adnexa, when desired, can not be carried out. 3. Evidences of tubercular degeneration or appendicular disease. 4. Carcinoma with involvement of the uterine ligaments or iliac glands. 5. Cases of pelvic hematocele with active non-circumscribed hemorrhage.

76. **Treatment of Incipient Laryngeal Cancer.**—The importance of early surgical treatment of laryngeal cancer is emphasized by Scheppegrell, though he notices the non-operative methods as applicable only to cases where operation is contraindicated. Among these are the use of the animal toxins, arsenious acid, an apparent cure by which has been reported by Costinin; and pyoktanin. He discusses the operations, thyrotomy and total extirpation. In tracheotomy with thyrotomy he prefers the operation in two tempos with an interval of a week between them, unless an immediate complete operation is urgently required. As regards total laryngectomy he thinks that when malignant disease has advanced to such an extent as to require it, the prognosis is very bad.

77. **The Acute Diarrheas of Infancy.**—In this lengthy article Morse describes the principal varieties of infantile intestinal troubles, which he divides, first into simple or nervous diarrheas, quickly relieved by removal of the cause. If it is due from fright and fatigue, this is readily done, and if climatic, change of air is necessary. If due to indigestion, purgation followed by, in rare cases, washing out the stomach and bowels may be necessary. In this form alone, opium in the form of paregoric, a few drops in a dose, and astringents are advisable. In infective diarrheas, which he divides into fermental, ileocolitis, and cholera infantum, the removal of the cause also is required. Prevention and hygienic measures are, of course, important. Opium and astringents are counterindicated. In the fermental diarrhea, which includes most cases, removal of the cause by purgation by castor-oil or calomel, occasionally washing out of the stomach and bowels with salt and boric acid solutions, temporary withholding of food for about twenty-four hours, and subsequently employing only carefully selected milk, of low percentages, in frequent doses, and use of bismuth in form of subgallate, and subnitrate is ad-

vised. In ileocolitis flushing of the bowels with the same solution as is used in the stomach, large quantities being employed until perfectly clear, followed by injection of bismuth and chalk mixture and mucilage are very useful, with other treatment on the same lines as in fermental diarrhea.

Cholera infantum is rare. The name is to be applied to all cases with extreme choleriform symptoms. The indications are to remove the toxins from the stomach and bowels; supply fluid to the tissue by subcutaneous injections of normal salt solution, a pint daily; reduction of temperature by cold sponging, etc.; restoration of surface circulation, and keeping the patient alive until the disease is cured. Stimulants are advisable, atropin, in doses of 1/500 to 1/800 of a grain, hypodermically is the most useful. Morphin may be given when diarrhea and vomiting are extreme or nervous manifestations very marked, in doses of not over 1/100 of a grain.

78. **Hygienics of the Skin.**—The principal points of Judd's paper, aside from his advice of the use of warm bath daily, followed immediately by cold sprinkling and full bath once every seven days with the same sequence is the importance of using linen instead of woolen underwear. He thinks that the general popular notion in regard to the value of woolen underwear is a delusion.

79. **Hernia Following Operations for Appendicitis.**—The summary of Harrington's paper is as follows:

Hernia and bulging occur frequently after operation for appendicitis, and result from the separation of muscles and other tissues in the scar. They are very common when drainage has been used.

The muscular and tendinous fibers should not be transversely cut in any appendix operation unless it is unavoidable.

As little drainage material as safety will permit should be used. When drainage is necessary the wound should be closed as far as possible with sutures, and the drainage removed as early as safety will permit. If the wound can be closed immediately the tissues should be restored to their normal position by suturing each layer.

Stout belts and trusses are of little value, and may even do harm.

The abdominal muscles from the earliest period possible after operation should be developed by appropriate exercises.

If hernia or marked bulging appears, operation for cure is safe and satisfactory.

81. **Otitis Media and Earache in Pneumonia.**—In this paper Meltzer has pointed out the relationship that frequently exists between lobar pneumonia in children and earache. The cases he observed were similar in that at the onset of the disease earache was a prominent symptom, but disappeared in the course of twenty-four hours, or else continuing in a mild degree—to disappear entirely either before the crisis set in or with it. In none of his cases did the pain outlast the disease, neither did the earache terminate in a suppurative otitis. Earache was usually on the same side with the pneumonia; hearing apparently was unaffected. The age of the children upon whom the observations were made ranged from 18 months to 8 years, the initial pain being more intense the younger the child.

In further discussion of his observations that in all the cases of lobar pneumonia complicated by otitis media not one has resulted in a discharge from the ear setting in during the course of the disease, the writer inclines to show a certain antagonism, in children at least, between pneumonia and otitis media suppurativa, "possibly because the pneumonia, by its hyperleucocytosis, acts as a derivative on the otitis."

83. **Menstruation and Pregnancy in Nursing Women.**—In this paper Brickner discusses the influence of lactation upon menstruation and pregnancy, and a number of interesting deductions may be drawn from his review of nearly 4000 cases under observation at the dispensary of the Mount Sinai Hospital. These statistics show 442 of the patients were nursing women, of these 191 had menstruated, a percentage of 43.3. Of these 20 per cent. had menstruated at regular intervals after the catamenia first returned, although the type of the flow sometimes differed from that existent prior to the pregnancy just ended. In explanation of this deviation from the normal, he considers it due in a large proportion of these cases to an unusually strong "menstrual habit." Heredity also plays an important role—four of the above cases were women whose mothers, and in one case a grandmother, had had a similar experience. Of the 191 women who had menstruated during lactation 26, or 14 per cent., were found to be pregnant, conception occurring most frequently in the fifth and ninth months of lactation. In the consideration of the influence of the milk of a menstruating woman upon the child at breast, occasionally the child is unaffected, again the larger proportion of women menstruate but a few times, or but once during lactation, the single catamenia is apt to be very profuse and then perhaps not again appear during lactation, hence the wisdom of not at once determining upon the removal of the child from breast unless the mother becomes worn and anemic.

The conclusions are different when the mother of a nursing child becomes pregnant. Ordinarily lactation should cease. In exceptional cases, if the mother is strong and healthy and capable of doing justice to both child and fetus, the child may continue nursing for a few weeks.

84. **Report of Case of Typhoid Fever.**—The case reported by Saleeby is one of typhoid, the perforation occurring early in the course of the disease, probably about the thirteenth day, coming on insidiously, with no marked reduction of temperature, pain being the most constant and pronounced symptom, the first vomiting occurring after eighteen hours. An operation was resorted to after this and the perforation located in the ileum, the intestine was brought into the abdominal incision and anchored by suture. Twisted iodoform gauze was used as a drain and placed deeply into the pouch of Douglas. Other similar drains were placed into each iliac fossa. Recovery from the surgical affection was rapid, little or no discharge resulting. A relapse in the typhoid condition occurred, with a moderate febrile run. Normal temperature was attained on the forty-second day.

86. **Chicago Drainage Canal.**—Starkloff gives his objections to the Chicago drainage canal, his arguments being mainly on *a priori* theoretical considerations.

87. **Gunshot Wounds of the Intestines.**—Spears reports a case of gunshot wound of the intestines producing thirteen perforations, all in the jejunum except two or three, treated successfully with the exception of a fecal fistula, which lasted for several months after the injury was received.

88. **Accidental Uterine Hemorrhage.**—By accidental uterine hemorrhage, Richard understands placental hemorrhage due to detachment other than in placenta previa. He reports two cases.

FOREIGN.

British Medical Journal, July 22.

Rest and Exercise in Open-Air Treatment of Phthisis. ARTHUR RANSOME.—The chief theme of this article is the value of rest in the treatment of phthisis, the claim that it produces gain in weight, better oxygenation of the blood, more continuous warmth of the body, more repose given to the bony levers overlying the injured part, and the beneficial influence of the recumbent posture on the state of fever. As regards exercise in these cases, we can attain our object by limiting the movement of the body to such a degree of exercise as will not quicken the action of the muscles of forced respiration. One source of danger is the increase of blood-pressure associated with respiration. Any exhaustion that may diminish the vital powers must be avoided. The degree of rest prescribed must depend first on the presence or absence of fever, and, again, on the digestive and assimilative powers. The amount of exercise will depend on the muscular and bodily vigor and on the amount and extent of movement allowed by the disease to the ribs in forced respiration, and especially to the bones over the injured parts of the lungs.

Treatment of Chronic Diarrhea. I. BURNEY YEO.—The writer reports a case of chronic diarrhea treated by various methods. The most interesting point, however, was the improvement under pancreatic emulsion. The cause of symptoms was obscure, but there was one that was constant, i. e., the whiteness of the motions, and this suggests the use of the remedy. The leaving off of this pancreatic emulsion was followed by a relapse of the diarrhea, and, at last report, the patient was still continuing to use it though apparently in first-rate health.

On Experimental Production of Hydrosalpinx and Hydrometra in Animals and Its Relation to Hydrosalpinx in the Human Subject. C. J. BOND.—From his experimental investigations Bond finds that in the lower animals and in the human subject, as far as the Fallopian tube is concerned, the mucous membrane lining the canal of the oviduct has a certain secretion of a peculiar and definite character, and that this is absent during pregnancy. Human hydrosalpinx is not a final condition in infective inflammation of the tube; it is merely a mechanical distension by normal secretion in a tube the two openings of which have been closed by inflammation.

Loss of Knee-Jerk and Peripheral Neuritis in Diabetes Mellitus. KARL GRUBE.—Grube's paper is based on the study of the facts already known, and 11 personal cases. He concludes that we have three manifestations of the nervous disturbances caused by the increase of sugar in the blood: 1, cramps or an acute irritation of the nerves, probably not accompanied by any material change in the nerves; 2, neuritis or acute inflammation of the nerves, and 3, a slow degeneration or nutritive change in the nerves which seems to have a preference for the crural nerve, and is then accompanied by loss of the knee-jerks, but which may also occur in other nerves, as, for instance, in the optic. It then leads to a gradual diminution of vision with central scotoma. The impotence which is so frequently a symptom in male diabetic subjects is also probably caused by nutritive changes in the corresponding nervous apparatus. He has frequently found it to be associated with loss of the knee-jerks.

Case of Traumatic Epilepsy Following a Compound Fracture of the Skull Sustained Eleven Years Previously. PHILIP JAMES.—The author reports a case of a man suffering from epilepsy dating back within a year, but attributed to an injury received ten or eleven years previously. There was, besides the fits, marked peripheral contraction of the visual fields. The cicatrix in the scalp of the former injury measured about four and a half inches in length on the right side of the vertex extending from near the median line outward and backward. It was considerably depressed anteriorly and posteriorly. Near its middle it was divided by a bridge of apparently unfractured bone. Posteriorly pulsation of the brain could be seen and anteriorly pulsations could not be detected, but just in front of the bony ridge there was a special point showing tenderness on pressure with dimness of vision. The operation was performed, and a silver plate inserted to make up for the loss of bone. The patient has been greatly improved, and has had no fits for eighteen months since the operation. One of the most interesting points connected with the case, however, was that the painful spot, pressure on which was followed by pain, tremor, and loss of vision, was ascertained by surface measurements to correspond very nearly with the right angular convolution. The two charts of vision given with the paper show diminution on both sides, but most marked on the left side, opposite the lesion.

Revista Medica de S. Paulo (Brazil), June 15.

Chronic Mastitis. S. RODRIGUES.—The observation reported is a warning not to confound the lesions of chronic mastitis with carcinoma, as has probably occurred more than once under similar circumstances. The mastitis had lasted twenty years when a slight accident caused suppuration and pains. The entire symptoms and clinical picture almost imposed the assumption of carcinoma and removal of the breast, but after evacuation of the pus the tumor disappeared.

Muscular Suture Without Buried Threads. M. VIANNA.—The stitch resembles a simple "crochet" stitch, with one thread and a Reverdin needle. The thread is drawn through from one side to the other in a loop long enough to reach over the point for the second stitch on the upper side of the wound. The needle is then inserted as before and parallel, and the thread hooked and drawn through the first loop and through the tissues to form a second loop. The third loop is drawn through the second, and so on. The whole suture ravels out instantaneously when the end of the thread is pulled.

Bulletin de l'Academie de Medecine (Paris), July 11.

Milk Serum in Restorative Serotherapeutics. LEREBOULLET.—After four years of tests and experiments, Gimbert and Tajasque of Cannes now announce that in milk serum we have a new product "as natural, as alive and as complete as biologic chemistry is able to produce," which modifies in the most favorable manner, attenuating or curing, all diseases accompanied by debility and generally defective nutrition. It has no vaccinating or immunizing properties, and is absolutely non-toxic and harmless. Although readily absorbed by all the natural channels, the hypodermic method has been preferred as better adapted for comparative tests. It has proved a most valuable vehicle for arsenic, strychnin, mercury, etc. Gimbert has now a long list of tuberculous and other patients cured with this new serotherapy, which he is soon to publish. The serum is prepared by coagulating the milk; the curd is dried in the oven, and ground to a powder, mixed with a little calcium carbonate and put over the water-bath for a few hours with the whey, first filtered and sterilized at 120 C. When the serum is sufficiently saturated it is filtered, a little carbolic acid added to preserve it, and sterilized again after bottling. Lereboullet and Dumouthier have also been testing a somewhat similar preparation, at Gimbert's suggestion, which confirms in the most striking manner the value of this new variety of serotherapy, although there was frequently a slight reaction which, however, did not interfere with the cellular renovation induced by the injections. No reaction occurs with the Tajasque serum under ordinary conditions.

Rhinoplastics by Italian Method. P. BERGER.—"The conditions of success are to have the operation planned to its minutest details before commencing, and never deviate from the plan, no matter what turns up; also to restrict this method to persons under 40, and particularly to children, who bear without inconvenience the forced elevation of the arm. It should be continued for eight days at least; the longer the better. Berger fastens the arm in a gauntlet which reaches above the elbow, made of elastic cloth, by straps and buckles to a dog-skin hood fitting over the head, neck and shoulders. This allows a little mobility and free circulation to the arm.

Presse Medicale (Paris), July 12.

Mucoid Transformation of Glandular Cells of Intestine in Infants. A. B. MARFAN AND BERNARD.—The lesion is observed in all catarrhal enteritis, but is more pronounced in acute attacks and is most intense in cholera infantum. Between the cells of the epithelium and especially between the cells of Lieberkuhn's follicles, certain rounded, refracted bodies appear, of a vitreous or hyaline aspect, resembling the balls of mucus in the goblet cells but differing from them by their greater number and by other characteristics. The writers conclude that these refracting globes are analagous to mucus, and are a modified, pathologic mucus or mucoid substance. If it is a phenomenon of defense on the part of the organism, it is frequently inadequate, as in spite of it, the microbes make their way through the intestinal epithelium and invade the tissue of the mucosa. Even in subacute cases with the alterations very pronounced, healthy glands are always found beside the transformed glands, and as almost the entire digestion and absorption of the milk in nurslings occurs in those portions of the intestine least affected, all seem to indicate that the initial and important morbid action in epithelial or catarrhal gastroenteritis is located in the contents of the intestine, rather than in its walls.

Focal Lesion of Internal Capsule. M. DIDE AND G. A. WEILL.—In this observation a circumscribed focus in the internal capsule without other cerebral alteration, caused laryngeal paralysis on the opposite side, with Weber's syndrome. The symptoms and anatomic alterations indicate that the intracortical laryngeal fibers pass into the capsule near the knee, at the anterior part of the posterior arm; also that laryngeal paralysis accompanying Weber's syndrome is in relation with a lesion of the anterior portion of the peduncle of the brain. The frequency of laryngeal paralysis in crossed hemiplegia is also signalled.

Revue de Medecine, April-June.

Frequency of Secondary Septicemia in Course of Pulmonary Infection. BECO.—As a result of a clinical and bacteriologic investigation, Beco concludes that frank pneumonia is a primary infection of the lung. The pneumococcus, thriving in the respiratory passages, exerts its influence on the organism by intoxication, which suffices in a considerable number of fatal cases to bring about the fatal issue. Sometimes the micro-organism, setting out from the primary focus, multiplies

secondarily in the blood stream, and induces a fatal septicemia. From a practical point of view the presence of the pneumococcus in the blood of a pneumonic patient implies a variable prognosis, according as the microbe undergoes multiplication or not. In the latter event it is of little significance from the prognostic point of view, whereas in the former it constitutes a sign of great gravity. Lobar pneumonia may result from infection of the lung by the pneumobacillus of Friedländer.

Semaine Medicale (Paris), July 19.

Purification of Potable Waters with Peroxid of Chlorin. H. BOURGES.—The process recently invented by Bergé of Brussels, by which peroxid of chlorin, formed by the action of sulphuric acid on potassium chlorate, is used for purification of water, has been applied in Belgium on a small scale, with perfectly satisfactory results—Ostende, Middlekerke and a boarding school at Lombartzdye. It is also being tried at Liège, and a committee from the French Public Health Department has been investigating it to determine its practicability for general use. The report of the committee is extremely favorable in every respect, although it advises waiting for longer experience with the system before introducing it on a large scale. To prevent danger of explosions the acid is diluted and cold; an aqueous solution of the peroxid is used and a current of air forced across it carries off any gas that may form. It not only destroys pathogenic germs in the water but oxidizes the organic matters in a most remarkable manner, and generates ozone which also assists materially in the purifying effect. The disadvantages of the process are that the peroxid must be in excess in the water, which gives it a peculiar taste like Javelle water and stains it yellow. But the peroxid soon spontaneously vanishes—four hours—indicated by the disappearance of the taste and stain, or by tests with starch water and potassium iodid, and the vanishing process can be hastened by passing the water over coke, when it is at once ready for use. Another disadvantage is that the organic matters must not be too abundant in the water, or too much peroxid would be required, hence the process demands the previous filtration of much contaminated water. The expense for 3 grams of the chlorate, which produces 1 gram of the peroxid, sufficient to purify 1 cubic meter of water, is about $0.0006. The Traube system of purification of water with chlorid of lime, which has been tried on quite a large scale with Nile water, requires the addition of sodium bisulphite to the water to remove the chlorin liberated by the process. The ozone method now on trial at Lille, endorsed by Calmette, is the only other important rival of the peroxid method of chemical purification.

Berliner Klinische Wochenschrift, June 5.

Varieties of Tabes Dorsalis. ADAMKIEWICZ.—In concluding a communication on traumatic tabes, Adamkiewicz makes the following classification: 1. The usual and most common form of tabes is that attended with primary parenchymatous degeneration of the posterior columns, with ataxia of progressive character, and grossly preserved muscular vigor. Its origin is unknown and it is incurable. 2. Traumatic tabes, which agrees with the preceding in its anatomic basis and its incurability, but is distinguished by its genesis, which is always traumatic, and by its stability, as compared with the progressive character of the former. 3. Syphilitic tabes, which originates in the vessels of the posterior columns, which are especially predisposed to syphilitic changes by reason of their peculiar arrangement. This variety occurs in two forms: *a*. As acute syphilitic tabes it depends on endarteritic processes, and like these is curable. *b*. Chronic syphilitic tabes, on the other hand, depends on interstitial changes in the posterior columns, and is thus stationary and incurable. Both forms of syphilitic tabes are characterized by motor weakness, ataxia, slight—in the acute form—or entirely wanting—in the chronic form, and absence of sensory disturbances. The knee-jerks are wanting in all forms of tabes, but in the acute syphilitic variety they may be variable.

Successful Operative Treatment of Case of Otitic Purulent Meningitis. LUCAE.—This author has reported the case of a boy, 14 years old, who at the age of 4 suffered with a discharge from the right ear, possibly as a complication of an attack of measles. The ear had thereafter suppurated with periodic intermissions. The boy had complained for a week of pain behind the right ear, and on examination the mastoid process, particularly toward its apex, was found sensitive, though not swollen. The auditory canal was wide, and contained purulent fetid secretion in moderate amount. At its depth it was obstructed by large granulations, projecting from its roof, and almost entirely occupying its lumen. Hearing was impaired on the right, the temperature was slightly elevated, and the pulse accelerated, but the ophthalmoscope revealed no abnormality. A day later, the patient could not sleep on account of headache, and the neck began to be stiff, while the temperature rose a little more, and the frequency of the pulse increased. In view of the gravity of the symptoms, and the probability that a purulent leptomeningitis had set in, the mastoid process was trephined, and pus reached at a considerable depth, together with granulations and cholesteatoma masses. The exposed dura appeared necrotic and, on the introduction of a sound, pus escaped by its side. An incision into the cerebral substance was unattended with the escape of further pus. The exposed cavity was carefully cleaned. The stiffness of the neck continued for some time, but the wound progressed favorably. About two weeks after the operation it was noticed that the hearing of the left ear was also greatly impaired, but this subsequently returned to normal, and in a short while the wound had entirely healed. It is believed that there existed a basilar meningitis limited to the right temporal lobe. The appearance of deafness in the left ear is attributed to hyperemia in the labyrinth resulting from transmission of irritation by continuity. Cerebral deafness of cortical origin is thought to be exceedingly rare, as each auditory nerve has bilateral representation, and the hearing function of one hemisphere, when lost, is readily taken up by the opposite hemisphere.

Centralblatt f. Chirurgie (Leipsic), July 8.

The Tobacco-Pouch Suture. F. DE QUERVAIN.—Doyen has lately been extending the application of the pucker string suture to abdominal surgery, using it on the appendix, intestine, stomach and Douglas' sac after abdominal hysterectomy, and now Quervain, after extensive tests on the cadaver, announces that it is stronger than the Lembert suture and is peculiarly adapted to the peritoneum, when the latter is movable and the opening is of moderate size. The ends can be tucked in and the thread drawn tight like an anus, or the edges can be left out and the stitches taken with longer stretches on the outside, which forms a particularly strong and effectual method of suturing organs invested externally with serosa, such as the intestines and gall-bladder. He is confident that one trial will convince all of the remarkable advantages to be gained from this suture on the peritoneum.

Centralblatt f. innere Medicin (Leipsic), No. 27.

Therapeutic Action of Dialysate of Digitalis. H. BOSSE.—This Swiss preparation of the freshly plucked plants, made by a special dialyzing process with water and alcohol, enables the essential principles to be accurately dosed: each part by weight of the dialysate, corresponding exactly to a part by weight of the plant. No powerful reagents are used in its preparation and ten cases of severe cardiac disturbances treated with it reacted promptly and effectually, fully demonstrating that it is the equal of other preparations of digitalis, to say the least. The effect on the diuresis was most marked.

Centralblatt f. d. Grenzgebiet der Medizin u. Chirurgie, June 15.

Artificial Alimentation by Subcutaneous Injection. A. BASS.—The conclusions of this comparative study of all that has been written on the subject since Menzel and Perco in 1869, are that artificial alimentation by subcutaneous injection is both practicable and effectual, and if the precautions indispensable to all subcutaneous injections are observed, is absolutely free from danger. Albuminous substances are not adapted to this form of alimentation, although Blum's protogen possibly inaugurates a new era in this respect. Certain carbohydrates, grape sugar in particular, are readily absorbed in moderate amounts and protect the albumin, but symptoms of irritation occasionally follow. Fats can be injected even in large amounts without causing the slightest symptom of irritation. They are entirely assimilated if rationally administered, and effectually protect the albumin. Subcutaneous injections of oil can even increase the weight. Alimentation by a combination of these three groups is only a question of time. The injections, especially of grape sugar and oil, are easily managed *in praxi*, using either a large hypodermic syringe or Leube's combination of needle, tube and funnel, which is simple and kept aseptic without difficulty.

Dermatologisches Centralblatt (Berlin), July.

Improved Technic of Irrigating the Urethra and Bladder According to Janet's Method. L. SPITZER.—Extremely satisfactory results from every point of view have been attained in Professor Lang's service at Vienna, with an improved irrigator consisting of a glass tube terminating in a slightly enlarged, almost spherical tip, the whole divided its entire length by a glass partition, into two spaces, each continued at the rear into a diverging branch, the whole forming a Y, each branch fitting into a rubber tube. The irrigator is not inserted into the urethra, but fits against the orifice, and is so easily managed that an intelligent patient can make his own irrigations. The fluid flows in through the upper tube and space and out at the other, the flow controlled by squeezing or kinking the rubber tube. Irritation from inserting the irrigator into the urethra is thus avoided; with care none of the fluid escapes and the hands remain clean and dry. The entire process occupies much less time than by any other method, which with the copious irrigation allowed is a most important factor in a rapid and thorough cure.

Deutsche Medicinische Wochenschrift (Berlin), July 20.

Sporadic and Epidemic Purulent Cerebrospinal Meningitis. E. STADELMANN.—The writer classifies acute meningitis as the purulent, the epidemic cerebrospinal and the tuberculous, with Quincke's new "meningitis serosa." He does not consider that epidemic cerebrospinal meningitis is due to any single micro-organism, but that two at least are concerned in its production: Fraenkel's pneumococcus and in the second rank, the meningococcus, with possibly others. He describes an observation in which the entire course of the disease was followed by inspection of the cerebrospinal fluid obtained by lumbar puncture: the pus cells were gradually destroyed and finally absorbed, the fluid regaining its clearness. The case was also peculiar in the recovery after intensely serious symptoms, and also from the fact that a hitherto undescribed bacterium was obtained pure in cultures which did not develop until eight days had elapsed after sowing; extremely motile, thick rods, staining with the usual anilin stains but not taking the Gram. In regard to the obligatory notification of epidemic meningitis he thinks the physician might restrict his declarations of cases to those in which Fraenkel's pneumococcus or Weichselbaum's meningococcus are found by lumbar puncture, and that other cases, due to other bacteria or cocci, are not contagious or malignant in the same way, and do not impose notification.

Epidemiology and Bacteriology of Cerebrospinal Meningitis. H. JAEGER.—It is Jaeger's opinion that we are probably in an epidemic period of meningococcus infection, which has of late years supplanted the Fraenkel pneumococcus in the etiology of most cases of cerebrospinal meningitis. Accepting the assumption of an epidemic period, the peculiarly resisting vitality of the meningococcus on the one hand, and its widespread dissemination, with the evidently slight disposition of human beings for the infection—manifested in the comparative smallness of the epidemics—would easily explain the epidemic and sporadic character of the cases. Careful scrutiny of those that have occurred in Germany the last few years, especially in military circles, shows that all the so-called sporadic cases radiate from a center of infection, and that a sporadic case may start a new center, even after long periods of latency of the microbe in dry dust. He also calls attention to the difficulty of differentiating the meningococcus from the staphylococcus, which has possibly been a source of error.

Deutsches Archiv f. Klinische Medizin (Leipsic), lxiii, 1 and 2.

Diazo-Reaction in Urine. CLEMENS.—Extensive chemical research on this subject is reported and clinical investigations which establish that normal urine never reacts positively, but that the diazo-reaction occurs in by far the largest majority of cases of typhus abdominalis, and its absence militates against the assumption of typhus in doubtful cases and positively excludes the possibility of febrile gastro-enteritis. The reaction is frequently positive in other febrile diseases, such as measles, scarlet fever, tuberculosis and especially miliary tuberculosis. The reaction seems to indicate that an abnormal katabolic product of the organic albumin is elminated in the urine.

Latent Fever in Chronic Tuberculosis. MIRCOLI.—By latent fever, Mircoli designated all disturbance in the regulation of warmth that occurs without elevation of temperature above normal. He established, for instance, that the variation between the external and internal temperature of persons with tuberculosis is greater than with normal subjects, also that their body temperature reacts more to internal and external stimuli, such as physical exertion or dietetic disturbances. The sweats of tuberculosis are independent of the fever, and are caused by certain toxins of the tubercle bacillus which are without influence on the temperature.

Prager Medicinische Wochenschrift, July 6.

New Method of Draining After Operations for Empyema. G. FELKL.—A glass tube about 5 cm. long, with a circular groove at the point where the lips of the wound close over it, is inserted in one end of the perforated drainage-tube. The latter is then placed in the wound, the two ends together, forming a loop and proving a most effectual drain. The loose end of the rubber tube is drawn out and cut off as healing progresses. Three cases of fresh uncomplicated empyema thus treated healed promptly and the resection of a rib was avoided.

Nordiskt Mediciniskt Arkiv (Stockholm), June 30.

Operative Treatment of Ankylosis of the Stapes. B. FLODERUS.—By an operation devised after much study and experimenting on cadavers, but without experience on man, Floderus proposes to replace a portion of the external wall which interferes with the transmission of sound into the labyrinth, by an elastic vibrating membrane which can transmit the sound perfectly into the internal ear. It promises fine acoustic functional results, freedom from relapses and comparatively little danger of infecting the middle ear, while it is practicable even in cases of extensive hyperostosis. It is especially adapted to cases of bony ankylosis of the vestibular articulation of the stapes, and although delicate and long, is evidently superior in many respects to the unsatisfactory operations on the stapes now in vogue. The middle ear is opened according to Stacke; the membrana tympani, the lateral wall of the attic, the malleus and the incus are extirpated; the labyrinth is trephined at the front edge of the fenestra ovalis, and the thin plate of bone is resected from a point 2 to 2.5 mm. from the anterior edge of the fenestra ovalis almost to the rear edge of the stapes plate, the resected surface measuring 2 mm. at the back and 1 mm. forward. The defect is covered with a Thiersch flap taken from the dorsal side of a finger over the middle phalanx, which forms the vibrating membrane.

Clinical Investigations of Frequency of Microbes in Blood. C. DE FINE LICHT.—Tests with one part blood to ten parts boullion kept in the thermostat for a day or so, developed colonies of microbes in the case of several febrile diseases in 31 out of 72 subjects with various affections. The conclusions are that bacteria, and most frequently the staphylococcus, will be found in almost all fevers produced by pyogenic microbes, as well as by the typhoid bacillus, the pneumococcus and other similar bacteria, when the temperature has risen above 39 C. When the microbes once enter the blood they may linger in it a long while, three months in one case of phlebitis and another of appendicitis, even though the temperature may have returned to normal or below. The microbes were found in the blood without evidences of fever, in only two cases, one a patient with ileus, who died with intestine intact, and temperature under 38 C. when the staphylococcus was first noted in the blood. The other was a fatal case of diabetic coma, the staphylococcus discovered the day before death, while the comatose condition, was still incomplete.

Societies.

International Congress on Behalf of Blind.—An international congress for the amelioration of the condition of the blind is to be held in Paris, Aug. 1 to 5, 1900. For particulars address the Secretary-General, Maurice de Sizeranae, Avenue de Breteuil, 31, Paris.

Canadian Medical Association.—The thirty-second annual meeting of this Association is to be held at Toronto, August 30, 31 and September 1, during the first week of the Industrial Exposition in that city. The building of the Education Department, through the kindness of the Honorable Minister of Education for Ontario, has been placed at the Association's disposal, and on the program interprovincial registration will be

fully discussed. In addition to the scientific phases, there are entertainments, receptions, musicales, an afternoon tea at the Royal Canadian Yacht Club on the island, a smoking concert, etc.

Rocky Mountain Interstate Medical Association.

Salt Lake City, July 25-26, 1899.

Although the Rocky Mountain Interstate Medical Association was organized at Denver last year, when the profession of that region was gathered together to attend the meeting of the AMERICAN MEDICAL ASSOCIATION, this was its first meeting for the hearing of scientific papers and discussions.

MEDICOLEGAL SUPERVISION OF PROSTITUTION.

DR. SALATHIEL EWING of Salt Lake City advocated this as a sanitary measure. While this vice should be restricted as much as possible, the experience of 4000 years showed it could not be eradicated. He favored licensing, weekly inspection, strict quarantine and treatment of the diseased in hospitals. The funds obtained by licensing should be wholly expended in support of the necessary hospitals, and institutions for the reformation of prostitutes. He cited the experience of St. Louis with such supervision of prostitution, as showing its effect in markedly lessening the prevalence of venereal diseases.

DR. H. S. SCOTT, Salt Lake City, believed that all prostitutes should be compelled to reside in houses of prostitution under close police supervision, and that medical examinations should be made twice a week by specially trained examiners.

DR. L. FREEMAN, Denver, said that the most excellent systems on paper had failed to work in practice. He cited the theoretically complete plan in operation in Vienna, which had failed to suppress, or even to notably diminish venereal diseases.

TREATMENT OF CHOREA.

DR. S. D. HOPKINS, Denver, read a paper on this subject, based on nineteen cases. He had obtained the best results with antipyrin, administered by the method of Dr. J. T. Eskridge; but he would not undertake any case unless his directions would be rigidly carried out. In the mildest cases the patient is permitted to sit up a part of the day; but in severe cases absolute rest in bed is enjoined. Antipyrin is given in increasing doses, the initial dose being as many grains as years in the child's age; with an increase of one grain per day. In mild cases the antipyrin is given only in the evening. In severe cases it is at first given three times a day. He does not give antipyrin when the patient shows any fever, or when there is any disease of the heart.

As soon as the choreic movements cease, or become greatly diminished in frequency, the antipyrin is stopped. Fowler's solution and iron are continued for two or three weeks after the cure appears to be complete.

DR. HUBERT WORK, Pueblo, Colo., found the rest cure often sufficient for the cure of chorea, without any drug treatment. Rest in bed is not always essential; but the patient must be kept away from other children, and free from excitement.

DR. JUDSON DALAND, Philadelphia, called attention to the anemia which generally attends chorea, by the relief of which arsenic does good. Autointoxication from fecal retention is also an important element in these cases; and treatment by cascara and enemas produces very satisfactory results.

HYDATIDIFORM MOLE.

DR. SOL. G. KAHN, Leadville, Colo., called attention to slight additions that had of late years been made to our knowledge of the subject. He had attempted to ascertain its relative frequency, and the influences which might cause it. Letters of inquiry were sent to 400 physicians, and responses were received from 78, and these included the mention of 12 cases he reported; 3 of these cases, seen by himself. This study showed the hopelessness of obtaining accurate statistics, and threw no light on the causation of the disease.

HEMOPHILIA.

DR. A. A. KERR, Salt Lake City, reported two cases. One patient was a boy of 10 years with healthy parents. The mother's brother had died of hemorrhage after an operation, at the age of 17 years; 2 other children of the same parents were healthy, and had died of hemorrhage at the ages of 12 days and 6 months respectively. The second case was that of a baby 10 months old. The family history was negative.

ADDRESS OF THE PRESIDENT.

DR. C. P. HOUGH dwelt on the need for the closer association of the physicians of the intermountain states, who were too far removed to regularly attend the meetings of the special societies held in the eastern states, and had to deal with many problems of peculiar interest to themselves. He favored regulation of the practice of medicine, but thought members of the profession of recognized ability and experience should be free to practice in any state, and that membership in the AMERICAN MEDICAL ASSOCIATION ought to be evidence of such fitness for practice. He touched on some questions now especially demanding the attention of the profession.

USE OF THE HEMATOKRIT.

DR. JUDSON DALAND, Philadelphia, pointed out the difficulties and extreme tediousness of making blood counts, the necessity of repeating them, and the large probability of inaccuracy. The method of estimating the volume of corpuscles with the hematokrit is not exactly comparable with the blood count. But on account of the rapidity with which it can be completed, it is of great practical value. With everything in readiness, and an assistant, the estimation can be effected in three minutes. More time is consumed in cleaning the apparatus and keeping it in order. Unless the tendency to coagulation of the blood is unusually great, it is not necessary to use any diluting fluid to prevent coagulation. Rapidity of manipulation is of the highest importance, to secure accuracy of results. He has found that 10,000 revolutions per minute for two minutes gives a satisfactory result. Treated thus, normal blood gave 50 per cent. of its volume corpuscles. This was taken as the standard, and the percentage read off from the instrument being multiplied by two gave the percentage of the normal. Thus if the corpuscles occupied thirty-hundredths of the tube, the blood contained 60 per cent. of the normal volume of the corpuscles. For comparison with blood counts 100 per cent. thus obtained might be taken as the equivalent of 5,000,000 corpuscles to the cubic millimeter.

FIBROID LUNG INDUCED BY EXPOSURE TO DUST.

DR. W. W. BETTS, Salt Lake City, has made a study of the fatal disease induced by working in the dust caused by grinding ore at De La Mar, Utah. The quartz ore here reduced forms a very fine powder; and he was informed that of a large number of men, all who had been exposed to this dust for a period of seven to nine months prior to January, 1898, were now dead. One case endured an exposure of eighteen months before becoming affected, and is still living. In contrast with this was one affected within three months and dead within ten months.

In 14 tabulated cases, the men having been 23 to 43 years of age, and all healthy when they engaged in the work, the average time they were able to work was thirteen months, and the average time of survival after leaving the mill ten months. Two autopsies were reported. In one the pericardium was greatly diseased. In both the lung was excessively firm, the air-cells largely obliterated by great increase of fibrous tissue. Chemical analysis showed silica present to the extent of 2.8 per cent. in the lung tissue and 3.8 per cent. in the bronchial glands. The only remedy of any value was prophylaxis.

DR. F. CLIFT, St. George, Utah, stated that all the men who had gone from that place to work in the De La Mar mills had come back with this disease. They were free from tuberculosis, and had previously been healthy.

DR. J. N. HALL had noticed among miners working at high altitudes, fibroid phthisis with emphysema.

DR. MAYO, surgeon of the De La Mar Company, believed that the number of deaths had been overstated. With the help of the records of the company, he had carefully investigated the matter, and found that of those who had worked there within the last four years thirty-four had died. Since their attention had been called to it the company had made extensive changes in their mills, supplying fans, hoods, ventilators, and respirators for the men, and instructing them with regard to their use. The men were not now in greater danger than grain shovelers, grinders, and other workmen continuously exposed to dust. He believed that a similar mortality would be found

among the workers in other mills handling the same kind of ore. He thought the disease when once contracted was necessarily fatal. The De La Mar company desires to aid in the investigation of the subject, and will welcome any practical suggestion as to prophylaxis.

REPEATED EXTRA-UTERINE PREGNANCIES.

DR. C. R. FLEMING, Denver, read a paper on this subject, and reported two cases. The first case, after symptoms of rupture, had presented evidences of sepsis, and had been treated three weeks for typhoid fever. She recovered after the opening of a pelvic abscess. Eighteen months later, having menstruated regularly in the interval, she had a similar attack, but refused operation and slowly recovered without it. The second patient was operated on after the symptoms of tubal rupture, and a pelvic hematocele removed. One year later symptoms again appeared, and operation showed the right tube ruptured, with a large blood clot in it. She again recovered. Both of these patients seemed to have been free from previous disease.

CARCINOMA OF UTERUS.

DR. W. W. GRANT, Denver, called attention to the increasing mortality from cancer, and its strong predilection for parts exposed to both traumatism and infection; especially the uterine cervix in women. On early diagnosis rests the only chance of cure. He advocated frequent examination of women near the menopause, with microscopic examination of suspicious lesions. In women who have borne children, all lesions of the cervix should be repaired at 40 years of age. Dangerous lacerations of the cervical canal might show little evidence of disease externally.

DR. J. B. PERKINS, Denver, urged that the danger of carcinoma could be lessened if we prevented laceration of the cervix, by giving plenty of time for its dilatation during labor.

(To be continued.)

California Academy of Medicine.

July Meeting.

THYROID EXTRACT IN MYXEDEMA.

DR. HERBERT C. MOFFIT presented a patient illustrating a case of myxedema treated with the thyroid extract. The patient, an Irishman, aged 43, gave no family history. All his relations, so far as he knew, were healthy, and had no trouble in any way similar to his own. The family was rather a long-lived one. He came to this country in 1868, and went at once into northern California, where he worked in the mines. At that time he was drinking mountain water, but noticed no trouble therefrom. In 1873 he met with an accident, dislocating his shoulder and breaking the clavicle, but so far as can be ascertained, no injury was sustained by the thyroid, and no ill effects followed. No goiter had developed either from this cause or from the water. He then worked in gas works, where he was exposed to overheating and sudden cooling. He followed this occupation for some years, and it was while employed in this kind of work that he first noticed symptoms of myxedema. This was seven years ago. He then commenced to gain in weight and become larger, especially in the regions of the knees, hands and face. He felt unwieldly, some slight coldness, and a general stiffness in movement. His walking was difficult, and his memory began to fail. Very shortly after the commencement of the symptoms, he could, with great difficulty only, remember recent events, and soon he was quite unable to remember anything save the episodes of his youth. This condition of affairs persisted for some three or four years, during which time he consulted many doctors, but without avail. He went to the country for a time, but again returned to the city, where he consulted Dr. Montgomery at the University of California clinic.

A lesion of the left side of the lower lip was noticed and diagnosed as epithelioma, for which he was sent to the City and County Hospital, where the growth was removed by Dr. McLean. At that time no thyroid extract had been administered, so that the effect on the epithelioma could not be determined in this case. After the operation he was referred to the medical wards of the Hospital for treatment for his general condition. Thyroid extract was at once administered. His condition before commencing the administration of the thyroid extract was as follows: The body was perfectly hairless—not only had the hairs of the head and face fallen out, but the hair on the entire surface of the body had also been affected. The memory was very bad; there was puffiness over the hands, face, knees and supraclavicular regions; the cheeks were red, as frequently seen in myxedema. The picture commenced to change at once on the administration of thyroid extract; he lost 47 pounds, the memory cleared up entirely, the hair returned on the head and all over the body, and the growth was thicker than previously. He left the Hospital absolutely well, and returned to his work. So long as he took thyroid extract he remained well, but cessation of the extract for a time brought on a return of the symptoms. At one time he took no thyroid for two months, and then returned to the Hospital, as bad as ever, with the exception that the hair had not fallen out to the same extent. At a subsequent time he went three months with no thyroid, and then returned with evidence of epitheliomatous trouble at the site of the old growth. He was placed on the thyroid extract for a while, and the appearance of the growth seemed to improve, but the change was not very rapid, so it was decided not to delay its eradication, and he was again operated on for the removal of the epithelioma. He has now been under thyroid treatment for about three weeks, after a lapse of no thyroid ingestion; he is much improved, the memory being again cleared up, some flesh having been lost, and the general condition rapidly improving.

DR. HERBERT C. MOFFITT—The story of this case is told by the man's hands and face, practically, for there is no other indication save what may be seen. The face is somewhat puffy, and the hands and wrists are in the same condition; the thickening under the eyes can be readily seen. He has had absolutely no trouble other than recounted; no hemorrhages after the operations, and no disturbances of any kind. There can be no question of the value of the thyroid extract in this case or in similar conditions. In myxedema, we may assume, thyroid is of great value, but in sporadic cretinism its value is problematic. I should like to mention a few of the other conditions in which thyroid extract has been used. It has been employed in a large number of different disorders and affections, sometimes with good, but more often with negative results. In psoriasis it has been found to be of much value, though the eruption seems to always return, whether the thyroid extract be continuously administered or not.

In some forms of insanity it also seems to be of value; it has been tried in many varieties of alienation, but seems to be useful in melancholia, principally; in epilepsy it is of no value whatever.

Another condition often mistaken for rheumatism, but in all probability, as described by Dercum, an early form of myxedema, is that in which the arms, back, belly and knees are found to be the seat of pads of fat; there is also an appearance of premature senility, together with pains and stiffness that strongly simulate rheumatism. The condition is at once relieved by the use of the thyroid extract. The extract has also been largely used in the treatment of sundry bone affections. In the case of delayed union after fracture, it may be of slight value; in rachitis it is of no value whatever. In the case of exophthalmic goiter, which is really a condition of over—rather than under—thyroidism, the ingestion of thyroid extract seems to be of no value, though a certain number of patients do improve under treatment by this agent.

In chlorosis most patients exhibit a slight enlargement of the thyroid gland, which may in some cases be marked. This enlargement seems to be glandular, and not vascular, and of the variety which we find physiologically at the times of menstruation and pregnancy. I am inclined to believe that some of the symptoms which we find in these cases of chlorosis are due to the enlarged thyroid, and that they are not all due to simple slow circulation, or enlargement of the jugular bulbs; these factors will not account for all the symptoms. Here the thyroid extract does not seem to be of value, perhaps owing to the over, rather than under, thyroidism. In chronic nephritis, thyroid extract has been strongly recommended, and is in some cases of slight benefit, though its value is problematic.

Thyroid extract has been strongly recommended in the treatment of inoperable cancer, and as an after-treatment following operation for the removal of cancer, to prevent recurrence. This usage of thyroid extract is strongly recommended in Eng-

land, where large doses are being used, with beneficial results reported. In affections of the prostate, and for myomata, it has been employed, but without result. Other forms of skin disease aside from psoriasis have been treated by means of the thyroid extract, but with less marked results than in the case of the disease mentioned, where it seems to have a truly marvelous effect. After a few days' treatment with the extract the lesions in psoriasis melt away like magic. Unfortunately they return in the course of time, whether ingestion of the extract be continued or not. It has been used for the treatment of lupus, but without effect, as also in the case of eczema, where, too, it seems to be of no benefit.

We find a certain amount of thyroid enlargement in a number of cases not classified, in which the affection of the thyroid has, in my opinion, an influence on the pathologic conditions that is not accepted at its true value. The case of chlorosis is an example, and we also note certain cases of affection of the male genital organs, where there is also a disturbance of the thyroid gland. I have recently seen several patients illustrating this condition. There is heart tremor, together with general nervousness and malnutrition, and the presence of an enlarged thyroid may be determined, varying in the extent of the enlargement. The symptoms are such as one sees in tobacco poisoning, but the cause is probably masturbation; at least, the patients generally give a history of excessive masturbation. Cessation of the evil practice, together with treatment by bromids and arsenic, and correcting the habits, generally cures the case. It is not a tobacco infection, for several of the patients in whom I have noted this condition do not smoke at all. In tobacco poisoning we also have an enlargement of the thyroid, but the condition is quite distinct from the case I have just mentioned.

In regard to the form of administration I would like to say a word. I have tried many methods and forms of preparation. The fresh gland is not reliable, for the butcher occasionally supplies some other gland. Parke, Davis & Co.'s tablets I have used, but find them often unreliable. I have used them with excellent results, for a time, but when the supply ran out and a fresh lot had to be obtained, all evidence of thyroid ingestion ceased. They vary, thus, very largely. I find the tablets made by Burroughs, Welcome & Co. very much more reliable, and use them, now, altogether. The effect from them is constant, so far as my experience has gone.

DR. JAMES F. MCCONE asked Dr. Moffitt what his experience in the treatment of obesity by thyroid extract had been.

DR. MOFFITT, in reply—I have not used it much for the purpose mentioned. Epstein, who suggested the method of dealing with obesity, in his later report does not demonstrate its usefulness. I do not think it is of value, for though there may be a loss of a few pounds in weight, the weight runs up again as soon as the patient ceases to take the extract. In a number of cases, too, there have been very unpleasant complications resulting from thyroid poisoning.

DR. S. J. HUNKIN—I know of a patient who, of her own suggestion, took thyroid tablets for the purpose of reducing her weight. She weighed 220 pounds normally, and in a month could reduce herself twenty to thirty pounds by using the thyroid. After their use for a short time she would, however, be troubled with shortness of breath, and her mother would make her stop their use. She would then return to her former weight.

DR. J. F. MCCONE—I have been using thyroid extract in the University clinic for the past two years, for the purpose of reducing weight, and have found that about three out of five patients respond to its influence. I remember one woman who lost sixty-five pounds in three months under this treatment. I do not know whether the fat returns, for it is impossible to observe many of these patients for any length of time. We have used it, too, for reduction previous to operations, and here it seems to be of use. I have not observed any unpleasant symptoms in these cases.

DR. S. J. HUNKIN—I have one patient who now has nephritis; I am not certain, but have every reason to believe that the nephritis was not present at the time the use of the thyroid was commenced.

DR. GEO. H. EVANS—I have made use of thyroid extract for reducing obesity in a few cases, and have found that if the diet is changed the weight is lessened; if the thyroid is administered without any attention being paid to the diet, no alteration in the weight seems to follow. I had therefore thought that the reduction was more probably due to the diet than to the thyroids.

DR. DOUGLASS W. MONTGOMERY—I first saw this patient on June 4, 1897. My case-book gives me data as follows: He was at that time 41 years of age, and gave no family history. There was very evidently a condition of myxedema present, besides an epithelioma on the left side of the lower lip. He had very red cheeks, spade hands, yellowish skin, puffiness in the supraclavicular spaces, and no thyroid gland could be detected. He was ordered thyroid gland extract, and sent to the City and County Hospital for operative removal of the epithelioma. I again saw the man on April 15 of the present year. He then came once more to me at the University clinic, presenting the symptoms and condition given by Dr. Moffitt. I noticed two keratoses, one on each side the scar of the operation for the removal of the old epithelioma, but was not sure that it was a recurrence of the epitheliomatous growth. I sent the man once more to the hospital, and the subsequent history of events has been given you by Dr. Moffitt. Under thyroid administration the keratosis much improved; the skin softened, and the hard, scaly appearance disappeared almost entirely; whether it would eventually have disappeared, or been cured under the thyroid treatment, it is impossible to say.

The extract of the thyroid gland does undoubtedly have a very decided effect on the skin; principally on the general nutrition of the skin. In those cases where there is a hard, dry, scaly skin, with a seborrheic eczema of the scalp, and falling out of the hair, administration of thyroid gland improves the condition very much indeed. In psoriasis the disease is not cured, for, as Dr. Moffitt has said, it returns whether the administration of the gland be continued or not. I attribute the good effect in these skin diseases to the general tonic action on the skin, and not to any specific action on the disease itself. The nutrition of the skin being improved, in any skin disease, improvement will follow; I think it is just so in psoriasis. The action is one secondary to an improved nutrition of the skin.

(To be continued.)

Chicago Academy of Medicine.

Regular Meeting, June 23, 1899.

(Continued from Page 350.)

GYNECOLOGIC ASPECTS OF PUBERTY IN ITS RELATIONS TO ADULT DISEASE.

DR. T. J. WATKINS—I will limit the few remarks I have to make to the relation of puberty to adult disease in the female, because "the mental and physical peculiarities of the two sexes differ in early life to a limited degree only." It is toward puberty when the organs of generation undergo secondary development, that their influence is exercised in the highest degree.[1]" By puberty will be meant the period between childhood and mature adult development. The length of this period of life varies much in individuals, principally as a result of the general health, and may extend over from two to five years. The importance of my subject is best illustrated by referring to the opinions of Emmet and Skene. They conclude, after very extensive experiences, that the majority of gynecologic diseases are the result primarily of imperfect development. Imperfect development is a prominent factor in the etiology of uterine displacements; injury of the pelvic floor at childbirth is often the entire cause of menstrual disturbances, and not infrequently the cause of sterility. With perfect development of the pelvic organs, congenital displacements of the uterus do not occur; and displacements following childbirth are not apt to result except as a sequel of pelvic inflammation.

During an experience of thirteen years in hospital, dispensary and private practice I have examined the pelvic organs of a large number of colored women who have borne children, and I have never, with possibly one or two exceptions, found in them relaxation of the pelvic outlet. Under the term relaxation of the pelvic floor are most cases of so-called important incomplete lacerations of the perineum; rectocele and cystocele.

[1] Skene: Medical Gynecology.

I have, however, found some cases of complete laceration of the perineum in the colored woman not associated with relaxation. The inference to be drawn from this is that the colored woman has a well-developed perineum, and that a well-developed perineum is the best protection against important lacerations at childbirth. You will agree that a well-developed organ resists infection better than a poorly developed one, and this fact is frequently observed in the clinical history of pelvic infections. Nearly all cases of dysmenorrhea in women who have never been infected are due to imperfect development of the uterus.

To secure normal development of the reproductive organs is to secure a uniform, harmonious development of the whole body. There are, however, cases of imperfect development of the reproductive organs in women who have an apparently good physique. This can probably be accounted for by the fact that the reproductive organs get their principal development during a short space of time, and during the time when there is rapid growth of the body in general, and consequently during a stage of more or less impoverishment of the blood.

These facts emphasize the necessity of a large amount of nutritious food, of good air, sunlight, not too much work, especially mental, during the period of puberty.

Ill management of the child during puberty seems to occur as often or oftener in the families of the intelligent and rich as in the families of the poor and ignorant. No rules can be formulated for the care of girls during puberty; each case should be treated individually and the treatment will depend much on the rapidity of growth, the environment, the temperament, and the general health of the girl.

The statement is frequently made that the women of America are a weak, sickly lot of individuals. If we are, however, to measure health and strength by mental and physical labor accomplished, the women of America compare very favorably with those of other lands.

MATERNAL DRUG-TAKING ASPECTS IN THEIR RELATION TO ADULT DISEASE AND DEFECT.

DR. GEORGE F. BUTLER—Of the vegetable narcotics, the one most abused has undoubtedly been opium, its chief alkaloid having produced more misery and relieved more suffering than any other agent in the materia medica. It is not, however, with the therapeutic use of morphin, but with one of the results of its abuse, that I propose to deal in the present paper.

The close resemblance between morphin and certain products of nerve tissue change certainly tends to indicate that it is less foreign to blood transportation than many other remedies. It is not astonishing, therefore, to find, as Bureau and Ringer have shown, that it passes readily from the maternal circulation through the placenta into the fetal circulation. About thirty years ago this fact was clinically demonstrated by Calkins, who found that the children of mothers addicted to the use of opium died of marasmus unless nursed by the mother or given opium when fed from the bottle. His observations were later corroborated by Erlen and Meyer, F. H. Hubbard of New York, Kiernan and F. B. Earle of Chicago, Madison of Brooklyn, C. E. Hughes of St. Louis, P. C. Layne of Cincinnati, and others.

This congenital opium habit adds one more problem to obstetrics, since it involves both the treatment of the opium-using mother during pregnancy and the mother after delivery. It requires considerable delicate acumen to guide a mother and child between the Scylla resulting from opium deprivation and the Charybdis consequent on opium using. There is very little doubt that the maternal use of this drug during pregnancy produces, as Talbot of Chicago has shown, degenerate children, but it is equally certain that the evils of deprivation are fully as great.

The management of the infantile opium habit when congenital is, however, much less difficult than that of the acquired habit during infancy through the use of soothing syrups, etc. The use or misuse of soothing syrup for infants is much older than generally supposed. Crabbe, in "The Borough," sung of it a century ago.

Among other drugs which may be the source of infantile drug habit are cannabis indica and lactucarium. Both of these have been found to pass through the placenta and would therefore form a basis of a congenital drug habit in the infant.

The experiments as to cocain are as yet indecisive. The habit, however, is much rarer with women than with men. This is particularly true of the habit as found among the Indians of South America, who had it for centuries. The other drug habits exert an influence on the fetus only through impairing general nutrition. Children of chloral-using mothers have been born checked at the senile time of the fifth month of pregnancy, and hence have borne some resemblance to the cases where syphilis has checked the development in a similar way. In a general way, the effect of maternal drug taking on the fetus may be summed up in the fact that any of the types of degeneracy can be produced by it.

BACTERIOLOGIC ASPECTS OF CHILDHOOD IN RELATION TO ADULT DISEASE.

DR. ADOLPH GEHRMANN—As to the bacteriologic and tubercular aspects of this subject, bacteriology teaches us that the young are the most easily affected; that is, natural immunity increases as the individual grows older, or, at least, to the time of maturity. It may increase later. There are two general conditions, as far as natural immunity is concerned, one that group of diseases of a bacteriologic or infectious nature in which there seems to be immunity, and the other large group against which there does not seem to be immunity of any marked importance. The condition of growth and development in the child, to bring about a perfect condition of maturity, should be one in which natural immunity is developed, as far as it is possible to do so. One of the most marked examples of diseases in which natural immunity can be developed is that in regard to tuberculosis. Of this I will speak in a moment.

In regard to the general diseases of a bacterial nature which occur in childhood, the impress of which is left upon the child in after years, the first one of these, and one of great importance to physicians and to the public at large is that of gonorrheal ophthalmia of the infant. We have evidences of this, as you know, in our large public institutions for the blind. I need not at this point bring out any of the various facts in relation to blindness in childhood and its results in after life, or the measures which should be employed to remedy that evil, but I simply present it as one of the obvious facts of bacterial diseases in relation to the effect on the adult due to disease in the child.

The second point is that of the relation of defects due to secondary infection in diseases which are recognized as affections of childhood—the exanthemata—and here the important point to bring out is the avoidance of a mixed or secondary infection during the diseases which are especially liable to occur in childhood, such as pus infection. A great many diseases occur in after life, which have absolutely no relation to anything that can be done in childhood to prevent them. In after years pneumonia will occur, for instance, and other infections due to bacteria which have no relation to anything which occurs during the period of child life, but the suppurative otitis media of scarlet fever may be the cause of changing the entire course of an individual's life.

In regard to tuberculosis, it has always been to my mind a well-established fact that it is a disease of early life, that is, it has its beginning in early life. We see the majority of cases of tuberculosis of bones, either of the joints, or of the spinal column developing during early periods of life. We know the defects and difficulties which result in after life from such infections in men or women who have been so infected.

(To be continued.)

American Association of Obstetricians and Gynecologists.—This association will hold its twelfth annual meeting in Indianapolis, Ind., Sept. 19-21, 1899. It is considered especially desirable that each author of a paper forward to the secretary a concise argument thereof, under three or four separate heads, to be printed in the permanent program. This will add to the interest of the discussions. One of the sessions, or as much thereof as may be necessary, will be devoted to the presentation of pathologic specimens and their histories, with discussions pertaining to the same. Twenty-nine papers are listed on the preliminary programme. Dr. Edward J. Ill, Newark, N. J., is president, and Dr. William Warren Potter, Buffalo, N. Y., secretary.

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SATURDAY, AUGUST 12, 1899.

MOSQUITOES AND MALARIA.

For many years we have known that malarial fever and certain similar animal diseases are caused by minute parasites of the blood. Considering the number of investigations on the etiology of these diseases, it certainly seemed strange to some that no light could be thrown on the form and mode in which the parasites, especially of human malaria, existed outside of the body, and on the way in which they gained entrance into our bodies. A number of theories were advanced; it was assumed that the microphytes existed in the soil, air, or water of humid regions, multiplying freely in these elements; that they were carried by air currents and in mists and vapors, infecting persons through the air breathed or the water which they drank; and in not a few places it was thought that malaria stood in some close relation to the bite of mosquitoes and other insects.

The mosquito theory of malaria is not of recent origin by any means. It was held by ancient Roman writers whose clinical knowledge of malaria was very accurate and minute; Linné, Sir Henry Holland and others regarded the transmission of malaria by mosquitoes as quite probable; such was also and is to-day the popular belief of peasants in certain parts of Italy and Tyrol, and of barbarous tribes in malarial districts of Africa and elsewhere; and we find the same theory advanced in a scientific manner by such medical men as A. F. A. King and Nott of America, Laveran in France, Manson in England, Koch in Germany, Bignami, Grassi and others in Italy.

In his very complete and interesting review of the whole mosquito theory Nuttall[1] carefully considers the various general facts and arguments which King, Laveran and others have brought forward in its favor. King looked on such arguments, as he could present, not so much as proof of the correctness of the theory, but rather as incentives to experiments and observations which might lead to convincing discoveries. From the voluminous observations tending in a general way to support the mosquito theory the following features may be selected for mention: The seasonal and soil relations of malaria which prevail especially in moist and warm seasons and in marshy regions—such as the deltas and courses of great rivers and also certain littorals—conditions which certainly greatly favor the development of mosquitoes and other insects; in malarial regions protection against the bite of mosquitoes also protects from malaria, as shown by the results of diverse measures employed by the inhabitants and of travelers through such regions; the decidedly favorable or antimalarial influence of certain occupations, of cultivation of the soil and also of altitude, presumably the result of the prevention of the sting or of the total absence of the insects. Indeed, it is generally accepted by those who have especially studied the question that mosquitoes always occur where malaria prevails. Grassi, Ross and Koch expressly state that they have not seen malaria in regions free from mosquitoes. It goes without saying that mosquitoes often occur where there is no malaria—not all mosquitoes are necessarily carriers of infection.

The mosquito theory of malaria received powerful support by the demonstration, by Theobald Smith, that the hematozoon of Texas cattle fever is transmitted by the bite of the cattle tick (*Boophilus bovis*); Laveran, Koch and others emphasize that the mosquito probably plays an exactly analogous part in malaria. Based on his demonstration that the *filaria Bancrofti* passes part of its existence in the body of the mosquito, Patrick Manson in 1894 expounded the theory that the organisms of malaria also divide their existence between man and mosquito; arguing from the remarkable fact that the flagellate bodies in certain forms of malaria are not developed until the blood containing them has been outside of the body for some time. Manson drew the further conclusion in favor of his theory that the purpose of the flagellate bodies is the continuation of the life of the malarial parasite outside of the human body. Now the hematozoa can not leave the blood-vessels spontaneously, hence the necessity for the presence and the operations of a suctorial insect. Manson, and also Laveran, believed that the human infection took place by way of drinking water infected by mosquitoes which had sucked up malarial blood and died after laying their eggs in the water, or by the inhalation of dust produced by the drying up of small pools and puddles which once contained infected water; furthermore, that human patients may introduce malaria by infecting the mosquitoes.

Manson's deductions were destined to exercise a decisive influence on this investigation because they pointed out the exact way in which some of the problems should

[1] Cbl. f. Bakt., Abth., I, 1899, xxv, 161 et seq.

be attacked in the actual and crucial experiments which were undertaken with signal success by Ronald Ross, an English army surgeon in India. Shorn of all details the results of Ross' great work during the past three and a half years—1895-1899—may be summarized in the following statements: The "cultivation" of the parasites of human malaria in the bodies of two species of mosquitoes inoculated by being allowed to suck the blood of malarial patients; in the infected mosquito the parasites occurred as peculiar, pigmented cells in the walls of the stomach. Feeding mosquitoes on the blood of birds containing hematozoa (*Halteridium* and especially *Proteosoma*), he traced the formation in the walls of the stomach of large cells which fall asunder into spindle-shaped bodies—"germinal rods"—which are carried by the blood to the salivary glands, where they collect in huge numbers and whence they are discharged into the blood of healthy birds bitten by the infected mosquitoes. It requires seven days or so after the infection of a mosquito before the germinal rods or sporozoites reach the salivary glands, and birds bitten by such mosquitoes fall sick five or six days afterward.

The development of the parasites in the body of the mosquito, as described by Ross, has been confirmed by such scientists as Manson, Laveran, Metchnikoff and Nuttall, who have all examined his specimens.

No sooner were Ross' observations made public than they were confirmed by the independent studies of those indefatigable students of malaria, the Italians, especially Grassi, Bastianelli and Bignami, whose researches in this direction have carried our knowledge of human malaria still further than Ross. They have succeeded in not only infecting persons with malaria through the bite of infected mosquitoes, but they have traced the whole development in the body of the insect of the crescent of the estivo-autumnal type and partly that of the tertian parasite. We are also told that they have found young parasites in the eggs of infected mosquitoes[2]. Malarial parasites have also been found in a large percentage (75) of mosquitoes captured in rooms and localities inhabited by malarial patients.

It will be recalled that Manson and others thought that the infection of persons with malaria occurred through drinking of water or the inhalation of dust containing parasites derived from dead, infected mosquitoes. King and others believed that the bite of the mosquito gave rise to the infection. Koch doubted the direct transmission of malaria from person to person by way of the mosquito; it did not seem likely to produce such a direct infection; if such should be assumed to be the case the disease would have to spread much more rapidly than it actually does—an argument which could now be met, if that were necessary, in the light of recent demonstrations, by the fact that there are many kinds of mosquitoes and that all do not carry malaria.

During their investigation Ross, and more especially the Italians, have learned that not all kinds or species of mosquitoes act as hosts of the parasites. There are many species, and among them the common or domestic mosquito (Ross), which do not seem to bear any relation to any known hematozoon infection. The particular kinds of mosquito which can furnish the suitable conditions for the growth in their bodies of the organisms of human malaria belong largely to the genus *Anopheles*, of which there are many varieties. Whether other kinds of suctorial insects than mosquitoes can act as the carrier of human malaria has not yet been determined.

Different suggestions have also been made with respect to the modes in which mosquitoes might become infected. Bignami thought that possibly the insects picked up the parasites from the ground, but Dionisi, from his investigations, could find no facts in favor of this view. Mosquitoes eat each other's excrements and possibly become infected in this manner. Or the larvæ might become infected through eating the cadavers of the mothers. Evidence is accumulating, however, which tends to show that mosquitoes once infected by drawing blood, may perpetuate their infectiousness through succeeding generations by transmission of the parasites in a sort of sporing form to the eggs of the female. Grassi has observed spores in mosquito eggs (*Anopheles*) and it has been found that in Italy fertilized females may live through the winter, perhaps in this way preventing the dying out of the parasites.

In connection with this phase of the matter it is inter-

résumé of the role of the ectoparasitic tick in Texas fever. In a recent paper, Theobald Smith[3] gives a clear résumé of the role of the ectoparasitic tick in Texas fever, the devastating disease which recent studies have shown occurs in Finland, Roumania, Italy, Australia, South Africa and German East Africa. The permanently infected territory in our own country includes most of the Southern States. That ticks carry this disease was suspected long ago; as early as 1868 it was mentioned only to be condemned by John Gamgee. Smith and Kilbourne have shown conclusively by their experiments that the tick carries the disease. The tick is exclusively parasitic in its habits and does not pass from one host to another. The fertilized female after a certain time drops dead to the ground and deposits one to two thousand eggs. After a varying time the embryos emerge, attach themselves to the host and begin a new life cycle. Now by placing animals in a pasture infected with the embryos of ticks from Texas fever cattle the development of the fever is observed to follow. Artificially-hatched eggs of ticks from sick animals also produce the disease when the embryos are placed on healthy cattle. While the life history of the parasite in the tick has not yet been traced—the Texas parasite has not yet been found in the eggs of the tick—yet it is warranted to assume that the eggs carry the infection and that the young tick discharges the para-

[2] Nuttall, loc. cit.; see also "Koch and His Methods," correspondence in the Phil. Med. Jour., July 15, 1899, p. 103.

[3] The Etiology of Texas Fever, with Special Reference to Recent Hypotheses Concerning the Transmission of Malaria, N. Y. Med. Jour., July 5, 1899.

sites into the host during the process of drawing blood. Smith assumes that partially immune cattle, in the blood of which the hematozoon may exist for years, under suitable states become the source of new centers of infection through the agency of the tick. Reasoning by analogy, Smith suggests that malaria may spread in a similar manner. Brought into a perhaps hitherto non-malarious district in the body of human beings suffering perchance from a chronic or mild infection, mosquitoes transmit the parasites to younger broods which again spread the infection among men. In temperate climates it is not unlikely that the parasite is protected over winter in the bodies of human individuals. Certainly the scattering of an infected brood of mosquitoes explains well what seems to happen in the newly malarious territory. Whether certain animals can harbor the malarial parasites of man is still undecided. Dionisi has found a hematozoon of the bat which resembles human varieties very much.

Reconstructing, in the light of the new facts, the developmental history of the malarial parasites, we find, as pointed out by the Italians, that human as well as animal parasites, or hematozoa, possess intermediate hosts and alternating sexual and non-sexual generations. The intermediate host is a warm-blooded animal, including man. The definitive host is an acarus (mite) or a diptera (mosquito, etc.). In the warm-blooded animals the parasites multiply rapidly by segmentation; temporarily unreproductive, sexual forms (crescents, flagellate bodies) are also formed, which copulate—probably as described in the case of certain hematozoa of birds, by MacCallum[4]—when they reach the stomach of the definite host; a sporoblastic form results, from which sporozoites arise, accumulate in the salivary glands of the hosts, when they are deposited in warm-blooded animals during the bite of the insects—a complicated yet simple cycle analogous to that of many other organisms requiring two hosts for their development: Tenia solium, Trichina spiralis, Filaria Bancrofti, Filaria recondita, the organisms of Texas fever and Tsetse fly disease. In the case of malarial organisms the insects are spoken of as definitive hosts because they harbor the higher stages of the development of the parasites.

The old mosquito theories of malaria are therefore to be considered as definitely verified by the results of recent experiment research. As a direct outcome of these new facts is to be noted the possibility of exterminating malaria from infected areas by preventing the development of dangerous mosquitoes, as advocated by Ross.[5] He points out that the harmful insects in a given locality may be detected by ascertaining, according to Manson's induction method, whether the parasites of malaria will live in them or not; that the breeding grounds—small bodies of water—can be found by searching for their larvæ, which have distinguishing characteristics; if these spots are sufficiently isolated and rare it is possible that the mosquitoes could be exterminated by filling up or draining the pools and plashes, or by the use of certain chemicals such as kerosene, which has been found quite efficacious in preliminary experiments. In the northern parts of the United States it is likely, as emphasized by Smith, that the prevention of stagnation of surface water would tend to hinder the springing up of the small foci of malaria noticed every now and then. It seems that war is about to be declared against the vexatious mosquitos.

[4] Jour. of Exp. Med., 1899.

[5] The Possibility of Extirpating Malaria from Certain Localities by a New Method. British Med. Jour., July 1, 1899.

BRITISH MEDICAL ASSOCIATION.

The JOURNAL has been favored, through the courtesy of the Editor of the *British Medical Journal*, with advance sheets of the general addresses and those before the sections of the British Medical Association. Some of these we hope to publish in full, or more fully abstract at an early date.

The address in medicine, by Sir Richard Douglas Powell, reviews a number of questions of practical interest, newer methods and instruments of precision in diagnosis, the superposition of infections, anomalous fevers and their diagnosis, the questions of immunity and susceptibility and serum therapeutics. As regards the prevention of tuberculosis, he especially cautions against alarming and exaggerated statements as to its contagiousness, "the evidence in regard to which except under the almost experimental conditions alluded to, is extremely slender." At the close of his address he adds a table indicating the actions of various sera.

Dr. Ogston's address in surgery is chiefly devoted to the disabilities of the medical men in the British naval and military services, and to the pointing out the needs of reform in these matters. He shows that the existing evils tend to perpetuate themselves, points out the remedies and gives as illustrations some account of the naval and military medical systems of Germany, France, and Russia. The scheme of reform and the danger of trusting to the broken reed of civil aid in time of emergency are clearly demonstrated.

Dr. Butlin's address before the surgical section, reviewing its program, calls attention to the fact, not heretofore much appreciated in this country, of the increasing use of firearms, and of gunshot wounds in civil life, and to the question of the prevention of military venereal disease, a subject that has long been one of the greatest importance, especially in relation to the British Indian army.

The address of Dr. Charles, before the section of anatomy and physiology, is a résumé of a large part of the physiologic advance of the past few years. As a somewhat critical summary of facts it is a valuable contribution, and concludes with congratulations on the present activity in physiologic research in Great Britain.

A practical subject well handled is that in Dr. Snell's address before the ophthalmologic sections, on "The Prevention of Eye Accidents Occurring in Trades," which he concludes are largely preventable. He would

make the use of eye protectors compulsory for workers in iron and steel, whose employment renders them liable to be injured by iron or steel splinters, or who are exposed to danger from molten metal.

Of the two subjects of Dr. George Thin's address in the section on tropical medicine, the first has the greater interest, being, as it is, a very full and complete statement of the history and present status of the question of the insect origin of malarial infection in man. In his second theme, the respective advantages of the schools of tropical medicine, he shows the special points in which the Netley School is favored in this respect. With this showing his plea for the opening of this school to civil physicians can only be heartily endorsed by the profession, not only of Great Britain, but in their behalf by that of the whole civilized world. England, with her numerous tropical dependencies, has better opportunities to add to the world's knowledge than any other land, and it is to be hoped that these will not long be unduly restricted.

In the above only a part of the important addresses have been noticed. As already stated, it is hoped to reproduce some of them more fully hereafter. The session of the British Medical Association, always a matter of world-wide interest, can hardly this year have failed to keep up its traditional high standard of scientific papers and discussions.

CONSCIENTIOUS OBJECTIONS.

It is stated that the English law exempting those who have "conscientious objections," from compulsory vaccination, is not nearly so disastrous in its actual working, as was anticipated by its friends and its foes. The agitation of the subject has had an educational effect on the public, and especially that part that needed it most has shown a greatly increased demand for vaccination, and this without any special effort or pressure by local officials. It would seem, according to the testimony of Mr. Chaplin, head of the local government board, at the recent annual dinner of the London Press Club, that the opponents to vaccination had overshot their mark, and that their success had been in some measure at least a boomerang to their cause. The wholesale misrepresentations in which they have indulged have had their effect in disgusting the public, to whom the facts have also been misrepresented.

HEAD OF "ST. LUKE'S HOSPITAL" GONE WRONG.

Those gentlemen who have so freely accepted positions on the consulting staff of "St. Luke's Hospital," Niles, Mich., and have adorned their office walls with its diplomas, will naturally be rejoiced to learn that its whilom head, "Dr. Granville," alias Burrows, has achieved still further distinction. We learn from the newspapers that he has made himself greatly desired in several states on account of his supervirile characteristics, and that he is now, as a much married man, enjoying public hospitality in one of the county seats of Minnesota with a prospect of sharing the hospitality of the state itself in company with other distinguished individuals whose photographs and biographies are well known, at least to many public officials. Those who accepted the appointment from his institution and expressed their satisfaction in their letters of acceptance at the distinguished company they were in, will now have still another cause for self-congratulation. We only regret that "Dr. Granville" could not have achieved like celebrity directly from his connection with the institution over which he so fitly presided, and that his active colleagues there could not share it with him. Possibly some of them are also broad and versatile geniuses, and we may yet hear from them.

TUBERCULOSIS AND CATTLE.

In Illinois and several sections of the country a vigorous crusade is being inaugurated against tuberculous cattle as a source of possible infection. Herds are being examined and decimated and the prospects seem good for the extinction of bovine tuberculosis in the near future. One question suggests itself at once, however, that is apparently not noticed by the press reporters of these transactions; that is, what is done about the infected quarters, the sheds, milking yards, stables, etc., that have been occupied by the diseased cattle? These certainly are liable to have become infected, and it is poor policy to expose healthy animals to the danger of becoming diseased by leaving them undisinfected. Something might, perhaps, also be said as regards infection of dairies, and also of pastures, but this latter may be carrying the matter too far, as fresh air and sunlight will probably serve as efficient disinfectants there. This is a matter that has probably not been neglected by the veterinary adjuncts of the health boards, but we have seen no notice of it in the reports.

OSTEOPATHS WANT TO GIVE MEDICINE.

The osteopaths in Iowa are now proposing to demand legislation that shall recognize them as a separate school of medicine, give them their own board of examiners, prescribe penalties for the improper practice of osteopathy without due qualification, and permit them to prescribe drugs in the same manner "as shall be accepted and used by other physicians." In other words, as the *Iowa Medical Journal* puts it, they are trying to organize the same kind of "trust" for which they have been so roundly denouncing the medical profession. The most important feature of their demands is that after having made claims that their treatment precluded the necessity of giving medicine, they are now demanding the right to use it as do physicians. This lets out the whole secret; they are simply trying to legitimatize diploma-mills, trying to open a short cut into the medical profession; as our Iowa contemporary very correctly says, one that requires no qualifications which ignorance can not overcome. This is a matter worthy the attention of our profession elsewhere than in Iowa; should they succeed there—which they are not likely to do, as the profession in that state seem to be awakening—or even think they can, they will try it elsewhere. This move simply emphasizes the need of medical organization in every part of the country to meet the various forms of quackery which are continually striving to defeat or abolish all laws made for the protection of the people against ignorance.

SANITATION IN PORTO RICO.

There has been constituted under the military government of Porto Rico a Superior Board of Health, consisting of a medical representative, each, of the army, navy and marine-hospital services and three civilian physicians. Their duties are defined in detail in General Order No. 102 of the Department Commander, and include not only supervision of health matters and vital statistics to an extent exceeding the functions of the average health board in this country, but also the supervision of public institutions, asylums, jails, court-rooms, theaters, etc., and the licensing and registration of physicians, pharmacists, undertakers and midwives. Its powers are broad, but apparently well defined, and with an intelligent but scientific board, such as is practically insured in this instance by its composition, health and collateral matters will be well looked after in Porto Rico. The advantages of the island as a winter resort are said to be very great, and there is nothing that will more enhance them than the general knowledge that sanitary supervision is thorough and complete. Whatever may be the permanent form of government adopted, it is hoped, for its best interests, that the efficient health measures of the provisional military control will be perpetuated.

YELLOW FEVER.

The latest reports regarding yellow fever at the Soldiers' Home, near Hampton, Va., are to the effect that the disease is completely under control, that no new cases are developing, and that the disease is practically stamped out. This satisfactory outcome might have been expected when it was appreciated that those in control knew the character of the disease, and went about the work of stopping its spread with energy. Every precaution was taken in the surrounding villages, not only in the way of quarantines but in preparing to isolate any cases that might develop; so that had it gotten beyond the confines in which it first started, the disease would still have had little chance of developing. During this outbreak, 42 cases have appeared, and 11 patients have died. Only one case has been found since the 31st ultimo, that one occurring or so diagnosed, on August 7. This patient had been sick and under treatment for some days, and the case is not considered as a new outbreak, but rather a delayed manifestation of the original infection. The soldiers in the Home have been removed to tents and the entire home fumigated and disinfected. A most radical quarantine is being enforced. The general health of the other inmates is excellent. House-to-house inspection of Hampton, Phœbus, Old Point Comfort and the small places on the road to Richmond is progressing and is about completed, but no new cases or suspects have been found. The Richmond authorities do not consider house-to-house inspection of that city necessary. Fear and anxiety are gradually subsiding, but there is no relaxation of quarantine rules.

YELLOW FEVER AS A CONTROLLABLE DISEASE.

The experience of the United States authorities in Cuba this year makes it appear that under strict control and sanitation, yellow fever is a manageable disorder. Under ordinary conditions and in previous years this disease was practically endemic in Cuban cities, Santiago in particular, which were regular foci of infection and constant sources of danger to our southern seaboard cities that were in direct communication with them. The conditions were held to be particularly favorable for the development of the disease which, while comparatively manageable on our own coasts, was beyond medical control there. The facts have proved that this is one of the fictions to be consigned to the limbo of exploded beliefs. While there have been outbreaks of yellow fever in several places among the unacclimated soldiers, in every case it has been promptly checked; the late epidemic at Santiago is a conspicuous example. Taking advantage apparently of the temporary absence of the medicomilitary governor, the germs came out, only to quickly disappear again on his return. In the second week in July, according to the press reports, the deaths from all causes were only sixteen, the lowest mortality known, and at the present time the little epidemic among the soldiers, appears to be under control. It may perhaps be too early for us to begin to congratulate ourselves that we have conquered the disease, but we have certainly scotched it and the facts show the high probability that in the future, if present conditions continue, still greater success will attend intelligent sanitation in those parts.

"CHRISTIAN SCIENCE" FOLLY.

The late peace congress at the Hague that has just ended its labors, has missed an important opportunity. According to "Christian Science"—a modern faith shared by judges, legislators, writers and others in highly civilized communities—while all disease and injury is simply a matter of belief on the part of the sufferer, its cause and hindrance to its cure may be due to the hatred and malice of others. Thus, as the *Buffalo Medical Journal* illustrates it, "No amount of water in the trenches, according to Christian Science could ever have given rheumatism or fever to an American soldier at Santiago. But a malicious thought on the part of his enemy would be liable to throw him into the hospital for months." We now see the real secret of the horrors of the war. Not explosive bullets, asphyxiating gases, or missiles from balloons should be alone excluded from civilized warfare, but malicious thoughts, which are far more deadly in what we non-illuminated think is a purely physical way. According to the latest revelations from "Christian Science," hatred is a direct cause of rheumatism, and therefore a sufficient concentration of this emotion might totally disable a hostile army. The Chinese method of training troops to make faces at the enemy is directly along this line of modern progress, and ought to meet the approval of every true "Christian Scientist."

ANTITOXIN IN THE TREATMENT OF DISEASE.

Whether or not, as a rule it is advisable or beneficent to try to enlighten the public on medical subjects, for the reason that it always seems to be able to misconstrue, there certainly can be no objection on this account to the publication of such a paper as that on "Antitoxin in the Prevention and the Treatment of Disease," contributed by Dr. J. J. Kinyoun of Washington, to the

current number of the *Forum*. While written for lay readers, the paper is strictly scientific and is a fair and plain statement of the subject. The author briefly explains immunity, and the methods of producing it, and outlines historically the gradual development of the method of treating certain diseases "by curative substances derived from bacteria," which had its inception in the discoveries of Pasteur. His statement of the question of the curability of diphtheria by antitoxin is most convincing, and his arguments, backed by irrefutable proofs in the way of statistics from all parts of the world, are certainly sufficient to satisfy any but the most prejudiced. Discussing the reported ill effects resulting from the use of antitoxin, he admits that more cases of paralysis are reported, but this is because more cases are cured. "Paralyses do not set in until a comparatively late stage of the disease; and the figures tend to prove that, if the fatal cases of former years had not died so soon after the attack, the percentage of paralysis would have been even larger than it now is under the antitoxin treatment." The author also discusses, but less fully, the treatment of tetanus by this method; the antivenin introduced by Calmette; Haffkine's investigations of the cholera spirillum; the inoculation against typhoid by Wright of the British Indian Medical Service, and, in fact, gives a general résumé of the whole subject. The paper is one that can be read with profit by those physicians who are yet pessimistic in their views in regard to the use of the serum in the treatment of disease.

THE EIGHTH COMMANDMENT.

One would not like to make the mistake of a prominent literary man who attributed the evils of a certain class of modern fiction to its "dallying with the sixth commandment," but we trust our Scriptural knowledge is sufficiently correct in the heading of this note. The special evil in a considerable portion of periodical medical literature is its dallying with the eighth commandment. The *Medical and Surgical Review of Reviews* (London), in its June issue brings out this fact very forcibly in referring to a single instance in which forty-one pages of matter out of a total of sixty-one were taken bodily from its columns without credit. This is an extreme case, but less wholesale offences of the kind are still too common and one need not look long before finding them. When so little is asked—only the due credit to the source—the theft seems the less respectable; it suggests a mental penuriousness and acquisitiveness that no one ought to possess. If the extract is of an original article, it loses much of its value if the first source is not given; of an editorial article or abstract of literature, it is practically plagiarism of the meanest kind. It is, moreover, taking and using what others have paid for, since editorial work, such as comments and abstracts of literature, is not obtained for nothing, but is a source of expense to the leading medical journals of the day. While it may be done inadvertently at times, at others there is evidence of deliberate carelessness in this regard, to call it nothing worse. The practice, while still too common, is, we are pleased to think, on the decrease, but such complaints as that of our contemporary remind us now and then that there is still room and need for reform.

DIAGNOSIS OF CARCINOMA OF DIGESTIVE ORGANS.

In the absence of a tumor the diagnosis of intra-abdominal malignant disease is at all times difficult, and even when a new growth can be detected by palpation and percussion the determination of its actual seat may be attended with much difficulty, or there may be doubt whether a single growth or more than one is present. Having observed in a series of cases of carcinoma of the digestive organs—stomach, intestines, liver, pancreas—repeated disparity between the clinical diagnosis and the post-mortem disclosures, Zennetz[1] points out some of the sources of error and the means of avoiding them. The absence of free hydrochloric acid from the gastric contents, and the presence of lactic acid cannot be accepted as infallible indications of the presence of carcinoma of the stomach. The secretion of hydrochloric acid by the stomach is intimately related with the blood-supply and the innervation of that organ, and especially its mucous membrane, and these in turn are related with the nutritive conditions of the body generally. Derangement in the blood-supply and in innervation gives rise to impaired function of the stomach and this in turn aggravates the primary condition. A like deficiency has been observed also with disease of other of the digestive organs. The presence of lactic acid in the gastric contents is a direct result of the absence of hydrochloric acid, and has no greater significance than this absence. Severe disease of any of the digestive organs exerts a marked influence on the functional activity of the pylorus, which becomes insufficient in consequence of impaired nutrition of its muscular fibers. Gastric catarrh and gastric dilatation are common accompaniments of carcinoma of the digestive organs, so that in consequence of paresis of the pyloric muscular tissue the contents of the duodenum are forced into the stomach with coughing, vomiting, sneezing, muscular efforts, etc. For this reason the patient often complains of a bitter taste, and the reactions of the gastric contents are altered from the presence of bile. The coffee-ground material often vomited is believed not always to consist of disintegrated blood, but sometimes of bile. Even in the presence of blood, the source of hemorrhage need not be a malignant new-growth of the stomach, as, for instance, when cirrhosis of the liver is associated with carcinoma of some other digestive organ. The presence of sarcinæ may be accepted as excluding gastric carcinoma, whereas the presence of large nonmotile bacilli visible in the gastric contents even without staining, is strongly indicative of that condition. The presence of sugar in the urine may in some cases be an important diagnostic symptom of carcinoma of the pancreas. The typical cachexia is sometimes wanting. Involvement of the biliary passages may give rise to jaundice, although this may occur with malignant disease of some digestive organ other than the liver. Carcinoma of the gall-bladder may, for obvious reasons, be entirely unattended with jaundice. The symptoms of carcinoma of the duodenum are much like those of similar disease of the stomach. From the foregoing considerations it will appear that while the diagnosis of carcinoma of the digestive apparatus may at times be made wth certainty, its localization is often a matter only of probability, and this is the more so when the growths are multiple.

[1] Wiener Med. Woch., May 20, 1899, p. 993.

Medical News.

Dr. A. C. Bernays of St. Louis has resigned his chair in theMarion Sims Medical College.

It is proposed in Germany to raise the age limit for criminal prosecution from the twelfth to the fourteenth year.

Dr. Charles Wirgman of Philadelphia, who recently returned from a trip to England, has gone to Bermuda for several weeks.

Two additional fatal cases of tetanus, probably the last of the long list of Fourth of July victims, are reported from New York City.

The site for the new building of the medical department of Hamline University, Minneapolis, Minn., has been chosen directly opposite the new city hospital building.

The reconstruction of six of the Paris hospitals, including the Charité and the Laennec, is urgently demanded by the Prefect, and ways and means are now under consideration.

The bronze statue in memory of Dr. William Pepper, Philadelphia, has been placed on its pedestal in front of the new Archeological Museum of the University of Pennsylvania, where it will remain until unveiled early in the autumn.

The physicians of Naples have been soliciting subscriptions for the purpose of founding a hospital for tuberculous patients. The Duchess of Ravaschiero has presented her large and handsome estate at Pozzuoli for the purpose, and the outlook is very flattering.

Dr. Wm. P. Jenkins, one of the commissioners of the New York Board of Health, is abroad, it is said for the purpose of inspecting crematories in the various European cities with a view to the establishment of a plant for the destruction of the refuse matter of New York City.

An asylum for the isolation of lepers has been constructed at Memel, in the extreme northeast of Prussia, and was opened last month. The lay press is extolling the energy and perseverance of the medical fraternity in arousing public opinion and the Government to the urgent necessity of the measure.

It is stated that Mrs. Mary Baker Eddy of Christian Science fame, is being sued in amounts aggregating $500,000 by Mrs. Josephine Curtis Woodbury of Boston. Seven different suits are pending, all of which are for alleged libelous remarks made by Mrs. Eddy at the First Church of Christ, Boston, Sunday, June 4.

The province of Gothland, in southern Sweden, is in a panic from the spread of anthrax among the cattle, which are dying at the rate of a hundred a day, according to the *Vossische Ztg.* The people in towns are afraid to touch butter, cheese or milk brought in from the country, as several deaths have occurred from infection among persons much in contact with the animals.

It is reported that at the recent quarterly meeting of the Missouri State Board of Health, held in Kansas City, a resolution was passed, to become effective in January, 1901, requiring all medical students desiring certificates for the practice of medicine in that state to study four years at a reputable medical college, instead of three, the present requirement.

Theodore Sutro, president of the Legal and Medical Relief Society, recently mentioned in the Journal, has appointed a number of well-known lawyers and physicians to serve as a committee of proposed legislation regarding Christian Science healing in New York. It is expected that the committee will draft a bill to be presented at the next legislature, explicitly defining the legal status of this and other similar "healing."

Under the direction of Dr. S. R. Hartman, assistant milk inspector, Philadelphia, eighteen cows out of a herd of twenty-four, found to be tuberculous, were promptly slaughtered. An investigation of another disease affecting cattle near that city disclosed that the animals had suffered from anthrax supposed to have originated from the carcasses of animals buried on the farm several years ago, in which the cause of death had been due to anthrax.

Changes at the Baltimore Medical College are announced as follows: Dr. J. M. H. Rowland has been made associate professor of anatomy, Dr. E. L. Whitney associate professor of physiologic chemistry, and Dr. Charles H. Potter associate professor of pathology. Dr. T. R. Williamson has been made assistant in pathology and bacteriology, and Dr. Chas. O'Donovan appointed clinical professor of diseases of children.

According to cable despatches, the International Congress of Obstetricians and Gynecologists began its third annual meeting, at Amsterdam, Tuesday, August 8, with a large attendance. The despatches give the following as being present from the United States: Drs. Charles A. L. Reed, Cincinnati, Ohio; L. S. McMurtry, Louisville, Ky.; X. O. Werder, Pittsburg, Pa.; J. H. Carstens, Detroit, Mich.; W. E. B. Davis, Birmingham, Ala.; L. H. Dunning, Indianapolis, Ind.; and Clinton Cushing, Washington, D. C.

It is announced that at the Sykesville (Md.) Asylum for the Insane, as a result of the open door plan inaugurated by the late Dr. George H. Rohé, and which has been in successful operation for more than a year, no patient during that period has been mechanically restrained or subjected to cell confinement within the walls of the institution. By the beginning of the year it is expected that the new department for women will be ready to receive its 200 inmates, who are to be exclusively under the charge of female physicians and female attendants.

A medical club has been organized in Paris, on the same social lines as the Berlin Club, which has been in successful operation for a year or so. The new club was formed among the medical members of the Cercle National, but is now an entirely independent organization, with the quarters of the Cercle National, 5, Avenue de l'Opera, at its disposal. The fees are $21 a year. Pozzi is president. Doléris and Marcel Baudouin were most actively engaged in its inception. Two hundred members are already inscribed.

The coroner's inquest over the body of Mrs. Flanders, the victim of Divine healing or Dowieism, which was referred to in last week's Journal (p. 365), was held in Chicago August 8. The jury brought in a verdict finding Mrs. Bratz guilty of criminal negligence and malpractice, and ordered that she be held to the grand jury for action. "Elder" DeWitt Holmes, a member of Dowie's Zion was also held. Pending the meeting of the grand jury, both were committed to jail, and after some hours were released on bail. The investigation developed the fact that both the above parties did enough to prove that they were practicing medicine, and the Illinois State Board of Health will bring suit against Mrs. Bratz for practicing without a license.

THERE IS a German society in New York formed for the purpose of ensuring a $200 funeral to its members. One of them recently had a limb amputated and applied to the society for a fourth of his funeral money, as a fourth of him was dead. The officers conceded the justice of his claim and appropriated the money, but with the stipulation that it was to be used exclusively for funeral purposes, and consequently the limb, embalmed and borne in a child's hearse, was buried with all due pomp and circumstance.

SERIOUS intoxication resembling gastro-enteritis, according to *Presse Med.*, July 12, was produced by the mistake of a druggist who used zinc sulphate instead of sodium sulphate in compounding Glauber's salts. When the victim recovered he sued the druggist, who claimed that the wholesale drug house had sent him zinc instead of the sodium sulphate he had ordered. The wholesale clerk stated that the driver had been sent to the chemical factory for sodium sulphate and had brought back zinc. The court condemned the druggist to a month's imprisonment and the clerk and driver each to a $20 fine.

Therapeutics.

Influence of Certain Substances Upon Diuresis.

MM. E. Barbier and H. Frenkel said at a recent French Congress, that if we may admit with M. Bouchard, that the diseased kidney imperfectly eliminates sodium salicylate and that in pathologic conditions diuresis may be impeded by this substance, the same is not true in the normal state. In a healthy man most clinicians admit that the salicylate has a diuretic effect. Certain authorities deny this statement upon clinical and experimental grounds. M. Siegert recently, for instance, claimed that the salicylate has no diuretic action, and attributes, indeed, opposite influence to this drug, warning the practitioner against its use in dissolving caffein and advising the substitution for it of sodium benzoate. Surprised at this conclusion, the authors cited had undertaken a series of comparative experiments upon the action of caffein associated with the salicylate and the benzoate of sodium. The experiments were performed upon dogs, by means of ureteral canulas. They had counted the number of drops flowing from the ureters, minute by minute, during two or three hours. At the same time the general pressure and the renal circulation were registered before and after the injections. Under these conditions the authors observed that caffein associated with either benzoate or salicylate of sodium increased the urinary flow in a very high degree. There appeared to be no difference in this respect when the caffein was associated with the salicylate or benzoate.

The general pressure, after a very slight and short fall, increased about 30 to 40 mm. of mercury for a medium dose of 1 centigram of caffein to the kilogram of the animal's weight. It attained its maximum at the end of two minutes above the initial pressure. In reference to the kidney, they observed a constriction of the vessels, lasting, on an average, only thirty seconds. The salicylate of sodium alone caused a very slight augmentation of the general pressure, and produced a dilatation of the renal vessels. The benzoate of sodium alone raised the general pressure some millimeters and excited no sensible modification of the renal circulation. In fine, there is no reason to consider the salicylate as an agent which diminishes the diuretic power of caffein. The authors do not venture to say that the salicylate is superior to the benzoate as a diuretic, but believe they can affirm that it is not inferior.—*Med. Bul. Med. and Surg.*

Alcohol As an Antidote for Carbolic Acid.

Occasional reports of carbolic acid poisoning, which appeared in recent issues of the current medical press remind us of the success achieved by Phelps in antidoting carbolic acid by the use of alcohol, says the *Med. Review*. He states that the hands may be washed with impunity in 95 per cent. carbolic acid by the use of alcohol. He has employed injections of pure carbolic acid in suppurating cavities and has then washed them out with alcohol. The procedure has not been accompanied by carbolic-acid intoxication. The method has been found to be very efficient in immediately sterilizing suppurating cavities, and many cases have been followed by a rapid absorption of the walls of the abscess and an obliteration of its cavity. The importance of the discovery in relation to accidents with carbolic acid can not be over-estimated. The frequency of accidental poisoning with this drug has greatly increased of late years, and the occasional accidental spillings of the contents of a bottle of strong carbolic acid over some portion of the body is by no means infrequent. The application of alcohol to these cases is said to furnish a perfect antidote. Carbolic acid, when swallowed, if followed at once by alcohol, is said to be immediately antidoted.

Resinol.

Dr. B. F. Ray says, in the *Western Medical Review*, that the following prescription duplicated perfectly the preparation called "Resinol," manufactured by the Resinol Chemical Company of Baltimore, and sold to physicians at the seemingly exorbitant price of 50 cents an ounce:

℞ Sulphur sub.
Acetanilid
Bismuth oxid
Plumbi acetas, āā.....gr. xxx
Pix. liq.....m. xxxvi
White petrolatum.....3vi
Carmine to color, q. s.

M. Sig. To be applied whenever the product "Resinol" is indicated in the following conditions: as an antiseptic, antipruritic, and sedative, in pruritus ani, dry form of eczema in children, piles, superficial burns of small areas, etc.

The liquid tar used in resinol is the acid tar of commerce and can be replaced by the alkaline liquid tar of the B. P., which is non-irritating to delicate skins. The above prescription will do anything that "Resinol" can accomplish, and has the advantage that it can be varied to suit the needs of the case.

Effect of Quinin on Asthmatic Attacks.

Van Sweringen *(Indiana Med. Jour.)* tried many remedies for an attack of bronchial asthma lasting two weeks, but at no time succeeded in getting more than two hours' freedom from distress. Amyl nitrite gave the patient fifteen minutes' ease; chloroform but little longer, after the inhalations stopped. Belladonna seemed to have lost its effect for good entirely. Morphin did better than anything else, and gave her longer relief, but was followed by so much nausea and vomiting that she refused to have it again. Iodids had been given regularly from the first. Then for the purpose of stimulating the inhibitory reflex center, quinin and strychnin were tried. The effect was almost magical. The dose of the quinin was 7 grains, and the extract of nux vomica was given in ¾-grain doses, and to this was added ¼ grain of the sulphate of codein. They were taken *pro re nata*. In the intervals the iodids were continued, and the patient had less asthma in the last year than in ten years previous.

ASTHMA.

The following prescriptions were recommended by Dr. Pepper for asthma, in the attack:

℞ Morphinæ sulphatis.....gr. 1/6
Strychninæ sulphatis.....gr. 1/60
Hyoscinæ hydrobromatis.....gr. 1/160
M. Sig. Administer by hypodermic injection each night.

℞ Ethereal tinct. of lobelia ..... ℥ii
Tinct. of asafœtida ..... ℥i
Tinct. of opium ..... ℥ss
Potassium iodid ..... ℥ii
Syrup of tolu ..... ℥iv

M. Sig. From one to two teaspoonfuls every one or two hours for an adult, according to the severity of the case.

℞ Ammonii bromidi ..... ℥vi
Ammonii chloridi ..... ℥iss
Tinct. lobeliæ ..... ℥iii
Spiritus ætheris comp ..... ℥i
Syrupi acaciæ ad ..... ℥iv

M. Sig. Dessertspoonful in water every hour or two during paroxysms.

The following prescriptions have been used with varying success:

℞ Extract euphorbiæ piluliferæ ..... m. iii
Nitroglycerin ..... gr. 1/200
Sodii iodidi ..... gr. ii
Potassii bromidi ..... gr. ii
Tinct. lobeliæ ..... m. ii

M. Ft. pil vel capsul, No. 1. Sig. From one to four three times a day.

FOR INHALATION.

℞ Potassii nitratis ..... ℥ss.
Pulv. anisi fruct ..... ℥ss.
Pulv. stramonii fol ..... ℥i

M. Sig. Use a thimbleful, place on plate, light with match, then inhale fumes.

SPASMODIC ASTHMA.

In spasmodic asthma the patient should not only take arsenic but should smoke arsenic cigarettes. The ordinary arsenical cigarette is made by saturating paper with a solution containing 15 grains of the arsenite of potassium in an ounce of water. The portion of the paper which comes in contact with the lips should not be impregnated, or, better still, a mouthpiece should be used.

In addition to smoking these cigarettes the patient should use this fuming inhalation at bedtime.

℞ Powd. anise fruit ..... ℥i
Powd. fennel fruit ..... ℥ss
Powd. sumbul root ..... ℥ii
Powd. stramonium leaves ..... ℥ii
Iodid of potassium ..... ℥ii
Powd. niter ..... ℥ii

The ingredients should be perfectly dry and intimately mixed. A tablespoonful should be ignited and the fumes inhaled.

—*William Murrell.*

Hay-Fever.

For this distressing disease Dr. William Murrell recommends the following for inhalation:

℞ Menthol ..... gr. viii
Chloroform ..... m. v
Benzol ..... m. xx
Oil of cassia ..... m. iii
Light carb. of magnesia ..... gr. xx
Water, ad ..... ℥i

M. Sig. A teaspoonful is poured into a pint of hot water at a temperature of 140 F. and the vapor is slowly inhaled for ten minutes.

The following prescriptions have been recommended for this disease:

℞ Mentholis ..... gr. xx
Olei amygdalæ dulcis ..... ℥ii
Acidi carbolici ..... m. x
Cocainæ hydrochloratis ..... gr. vi
Ung. zinci oxidi ..... ℥ss

M. Sig. Apply thoroughly to the nostrils on cotton attached to a toothpick.

—*Frederick G. Smith.*

℞ Cocain
Menthol āā ..... 0|5
Boric acid ..... 5|0
Powdered acacia āā ..... 5|0

M. Sig. Use as a snuff.

℞ Camphor ..... gr. x
Boric acid ..... ℥i

M. Sig. Use as a snuff.

℞ Olei eucalyptus ..... ℥i
Glycerini ..... ℥i
Tincturæ opii ..... ℥ii
Aquæ destil, q. s. ad ..... ℥vi

M. Use with atomizer three times daily.

Or

℞ Liq. potassii arsentis
Extracti nucis vomicæ fluidi
Ext. cinchonæ fluidi (detannated) āā ..... ℥iii
Alcoholis ..... ℥iii
Syrupi aurantii q. s. ad ..... ℥xvi

M. Sig. One to two teaspoonfuls, taken three times daily, with or after meals.

—*Hall.*

℞ Chloralis
Pulv. camphoræ āā ..... gr. xvi
Acidi carbolici ..... gr. xx
Morphinæ ..... gr. xii
Acidi oleici ..... gr. vii
Olei ricini ..... ℥vii

Rub well together to make a lotion. Apply by means of a little ivory or hardwood plug to the interior of the nostril.

—*Horace Dobell.*

℞ Camphor menthol 1-3
Lavolin 100

M. Sig. Use as a spray to check sneezing and arrest profuse watery discharge.

—*S. S. Bishop.*

FOR THE HYDRORRHEA ACCOMPANYING HAY-FEVER.

℞ Sodii bisulphatis ..... 1 part
Aquæ destil ..... 500 parts

Or the exhibition of a wash of

℞ Acidi acetici ..... m. ii
Resorcini ..... gr. iss
Sodii chloridi ..... gr. iv
Aquæ destil ..... ℥i

Miller says, "change of residence if possible, before the known date of annual recurrence, is the only positive prophylaxis or cure.

Make sure that the nasal passages are free from irritating obstruction. After a course of Carlsbad salts and spraying the nostrils with Carlsbad water, douche the mucous membrane with a strong solution of nitrate of silver, and, as an after-treatment, apply:

℞ Mentholis
Resorcini āā ..... gr. xlv
Spiritus vini diluti ..... ℥iv

Specific for Menstrual Disturbances.

Professor Hirth of Munich was for two years superintendent of the European custom-house at Chung King, the metropolis of western China, Mongolia and Thibet, where his attention was called to the tang kui root, which has been used for many centuries in China as a remedy for menstrual disturbances. He and others have been testing it, and he is strongly inclined to believe that it is the long-sought specific for amenorrhea without abortifacient properties. He describes it and its action in the *Munich Med. Woch.*, No. 23.

Rational Administration of Cod-Liver Oil.

An article in *Echo Med.*, July 2, states that cod-liver oil as usually administered is worse than useless. It should never be taken except after meals and, if possible, fully an hour should elapse to allow time for the stomach to secrete undisturbed. Two spoonfuls should be taken twice a day, increasing by two a month to a maximum of eight in January, and then decreasing in the same manner. The spoon used should be a tea, dessert or tablespoon, according to age and the case. The oil has no therapeutic effect, he adds, but is merely for superalimentation.

Diphtheria.

The Italians report (*Semaine Med.*, July 19) that severe cases of diphtheria can be effectually treated by the administration of the diphtheria serum by intravenous injections. Gagnoni has recently saved, by this means, three children in a very advanced stage with croup and symptoms of suffocation.

Book Notices.

The Throat and Nose, and Their Diseases. With 550 illustrations in colors, mostly designed and executed by the author, J. LENNOX BROWNE, F.R.C.S.E. Senior Surgeon to the Central London Nose, Throat and Ear Hospital, etc. With special assistance as follows: Anatomy, Mayo Collier, M.S., F.R.C.S.; Nervous Diseases, James Cagney, M.D., and Histopathology, Wyatt Wingrave, M.R.C.S. Fifth Edition. Revised and rewritten. London: Baillerie, Tundell & Cox. 1899.

The fifth edition of this well-known treatise, according to the author's preface, has been so largely rewritten and changed, even from the fourth edition, that it is practically a new work. The anatomy and physiology have been brought up to date, and a new feature, that of normal histology, has been added. The morbid anatomy, gross and microscopic, has correspondingly required revision and illustration, and a new chapter on bacteriology as applied to the nose and throat has been written. These have necessitated complete revision and extension of other subjects, and the general result is an entirely different book in many respects. The illustrations have also been increased to correspond with the other changes.

Dr. Browne's former views as to the antitoxin treatment of diphtheria are well known. His discussion of the subject here is brief, too much so in our opinion, and is in striking contrast with his lengthy though skeptical treatment of the subject in the recently issued supplemental volume of "Keating's Cyclopedia." The impression left here is that his views are perhaps in a transition state as to the importance of the method.

Besides the cuts in the text, a set of fifteen plates illustrates the more important conditions. The general make-up of the work is very fine, and there is a tolerably full index.

Urinary Analysis and Diagnosis. By Microscopic and Chemical Examinations. By LOUIS HEITZMANN, M.D. With 108 original illustrations. New York: William Wood & Co. 1899.

This volume, while giving the principal chemical methods of urinary examinations, is especially strong in the microscopic tests, the illustrations being particularly good and abundant. The third section on microscopic diagnosis is also a valuable feature and one that will be appreciated. Here also the figures are especially numerous and illustrate the text. It is in these microscopic sections of the work that its value is greatest, and this was the intention of the author, as stated by him in his preface. It will be a useful work for the student and practitioner.

A Text-Book on Practical Obstetrics. By EGBERT H. GRANDIN, M.D., Gynecologist to the Columbus Hospital; Consulting Gynecologist to the French Hospital; late Consulting Obstetrician and Obstetric Surgeon of the New York Maternity Hospital; Fellow of the American Gynecological Society, etc. With the collaboration of GEORGE W. JARMAN, M. D., Gynecologist to the Cancer Hospital; instructor in Gynecology in the Medical Department of the Columbia University; late Obstetric Surgeon of the New York Maternity Hospital; Fellow of the American Gynecological Society, etc. Second Edition. Revised and Enlarged. Illustrated with 64 full-page Photographic Plates and 86 Illustrations in the Text. 6½x9½ inches. Pages xiv—461. Extra Cloth, $4.00, net; Sheep, $4.75, net. Philadelphia: The F. A. Davis Co.

The book has for its reason of publication, as the authors state in their preface, the modern requirements of clinical instruction in obstetrics. It would appear from examination that it meets these requirements, giving the essential and practical points, but leaving the vast amount of anatomic and other collateral facts that occupy so much space in most obstetric text-books to be learned elsewhere. Indeed, it is to be assumed that these have been already acquired by the student. It is, therefore, a work that is especially adapted to the student and practitioner who are already qualified in these regards. In some respects the treatment of certain subjects seems brief, but clearness and reasonable fulness are really the essentials. The work will probably meet with deserved success.

International Directory of Laryngologists and Otologists, containing Names and Addresses of Practitioners engaged in the Study and Practice of Laryngology and Otology. Compiled by RICHARD LAKE, F.R.C.S. Published under the auspices of the *Jour. of Laryng. and Otol.* Pp. 111; 12mo. Cloth. London: The Rebman Publishing Co. (Ltd.). 1899.

This little book is supposed to contain the names of practically all the specialists in these two branches throughout the world. While completeness is not claimed, the list seems to be nearly as complete as it is possible for such a work to be. It contains a list alphabetically arranged by names; and also a list of the important cities, alphabetically arranged, with the names of the specialists residing in each. There is also a list of journals devoted to larynogology and otology. The book will be found of great value to those who are interested in reaching the laryngologists of the world.

Newer Remedies: Including their Synonyms, Sources, Methods of Preparation Tests, Solubilities, Incompatibles, Medicinal Properties, and Doses as far as Known, Together with Sections on Organotherapeutic Agents and Indifferent Compounds of Iron. A Reference Manual for Physicians, Pharmacists and Students. By VIRGIL COBLENTZ, A.M., Phar.M., Ph.D., F.C.S., etc. Third Edition, revised and very much enlarged. Philadelphia: P. Blakiston's Son & Co. 1899.

The above lengthy title of this little work gives a very correct notion of its contents and value. The omissions are very few among the newer remedies, and it will be found a very useful and satisfactory reference manual.

Massage and the Original Swedish Movements: Their Application to the Various Diseases of the Body. By KURNE W. OSTRUM. Fourth Edition, revised and enlarged, with 105 illustrations. Philadelphia: P. Blakiston's Son & Co. 1899.

The appearance, within ten years, of the fourth edition of this little work shows clearly enough that it has in it elements that bring it in demand. It is certainly a very convenient, handy book on its special subject, but it can hardly fill the place of larger works that go more deeply and fully into the matters. For a large class, however, it will be found useful, and it has enough in it peculiar to itself to render it a convenient addition to the literature of the subject already in our possession.

International Medical Annual and Practitioner Index. A work of reference for Medical Practitioners. New York and Chicago: E. B. Treat & Co. 1899.

The seventeenth volume of this well-known annual sustains its already earned reputation, and contains a very large amount of well-selected and condensed medical information, well up to the date of its publication. If we are to make any criticism it is for the lack of mention of psychiatric subjects; in other respects it is quite full and complete.

Practical Materia Medica for Nurses. With an Appendix Containing Poisons and Their Antidotes, with Poison Emergencies, Mineral Waters, Weights and Measures; Dose List; and a Glossary of the Terms used in Materia Medica and Therapeutics. By EMILY A. M. STONEY, Graduate of the Training School for Nurses, Lawrence, Mass.; late head nurse Mercy Hospital, Chicago, etc. $1.00 net. Philadelphia: W. B. Saunders. 1899.

So far as we can see from a rapid examination of this work it contains about everything that a nurse ought to know in regard to drugs. It gives the name, dose, therapeutic and toxic action, and preparations of nearly all the well-known and of many of the newer substances used in medicine, and, so far as we have been able to see, correctly. As a reference book for nurses, when they need such, it will without question be very useful.

Laboratory Work in Bacteriology. By FREDERICK G. NOVY, Sc.D., M.D., Junior Professor of Hygiene and Physiological Chemistry, University of Michigan. Second Edition, Revised and Enlarged, with frontispiece and 76 illustrations. Ann Arbor: George Wehe. 1899.

As a students' laboratory guide, which is daily standing the

test of use, this work can be cordially recommended. It does not, as the author states in his preface, give full consideration to certain subjects, like the questions of immunity and the individual pathogenic bacteria, as these subjects are treated by him, in his course, in lectures that are altogether distinct from the laboratory work. It contains, however, in its opening chapters, the necessary general information for laboratory work, and the concluding chapters describe special methods and tests suitable for advanced student work. The value as a student's manual is enhanced by the blank pages opposite the specific descriptions for notes, illustrations, etc.

Surgery of the Head and Neck. By LEVI COOPER LANE, A.M., M.D. (Berol), M.R.C.S. (Eng.), LL.D. Professor of Surgery in Cooper Medical College, San Francisco. Second Edition. Philadelphia: P. Blakiston's Son & Co. 1899.

The author's modest preface disarms criticism of this work, were we inclined to offer it. As it has reached a second edition in three years, it is fair to assume that its merits have been appreciated. It is certainly a work of much labor, though it does not impress us as being quite up to date in a few points. There is nothing to indicate any special change or revision in this edition.

Cyclopedia of the Diseases of Children. MEDICAL AND SURGICAL. The articles written especially for the work by American, British, and Canadian authors. Vol. v. Supplement. Edited by WILLIAM A. EDWARDS, M.D. Illustrated. Philadelphia: J. B. Lippincott & Co. 1899.

Since the appearance of the last volume of Keating's Cyclopedia a number of years have intervened, and this supplemental volume is, therefore, the more welcome to its readers. The articles here published are certainly not less meritorious or valuable than those in the earlier volume, and they bring our knowledge of the subjects fairly up to the year 1898. Some omissions of subjects are noticeable, but the work is as a whole a comprehensive and very valuable addition to literature of children's diseases. The list of the authors, including as it does such names as those of Hare, Osler, Lennox Browne, Jacobi, DaCosta, Starr, Ashhurst, Kelly, and others hardly if any less well and favorably known, would promise this, and careful perusal will confirm all expectations.

Atlas of the External Diseases of the Eye. Including a Brief Treatise on the Pathology and Treatment. By PROF. DR. O. HAAB. Authorized Translation from the German. Price $3.00. Edited by G. E. DE SCHWEINITZ, A.M., M.D. Illustrated. Octavo. Cloth. Pp. 288. Philadelphia: W. B. Saunders. 1899.

This is another of Saunders' Medical Hand-Atlases, and is as fully deserving of praise as any of its predecessors in the series. The illustrations are beautifully graphic, most of them being true to nature. The descriptive text covers the whole field in a thoroughly practical manner. Dr. G. E. De Schweinitz, the American editor, has added much of value, and has made the work a reliable one.

Deaths and Obituaries.

DANIEL G. BRINTON, M.D., Philadelphia, died while on a visit to Atlantic City, N. J., July 31. Dr. Brinton was born in Westchester, Pa., 62 years ago, and was a graduate of Yale, and subsequently of Jefferson Medical College. During the Civil War he served as medical director until disabled by sunstroke, afterward receiving appointment as superintendent of hospitals in Quincy and Springfield, Ill. For a time he was editor of the *Medical and Surgical Reporter*, and of the *Compendium of Medical Science*. In 1886 Dr. Brinton was awarded a medal for his researches in American ethnology, by the Société Americaine de France. He was professor of ethnology and archeology in the Academy of Natural Sciences of Philadelphia and of American archeology and linguistics in the University of Pennsylvania. He gathered together a library of original American literature printed in the original. Very recently he gave to the University of Pennsylvania his entire collection of books and manuscripts relating to the aboriginal languages of North and South America, consisting of nearly 2000 titles and 200 bound volumes. The collection will be named after him.

FRANCIS C. GREENE, M.D., Yale, 1851, long a practicing physician in East Hampton, Mass., died there August 2, aged 72 years. During the Civil War he served as a surgeon under General McClellan in the Peninsular campaign. A widow survives him.

D. O. DAVIS, M.D., for twenty-five years a resident of Baltimore, died in that city August 3, aged 53 years. He was a native of Wales and came to America in 1866, and first engaged in the drug business in Washington, D. C. He moved to Baltimore in 1875 and received the degree of M.D. from the College of Physicians and Surgeons, Baltimore, in 1880.

CHAS. W. ADAMS, M.D., Kansas City, Mo., died suddenly August 3. Dr. Adams was one of the founders of the University Medical College of that city, and its dean from 1880 to 1895. He was a member of the AMERICAN MEDICAL ASSOCIATION, the Missouri State Medical Association, Jackson County Medical Society and the Association of Military Surgeons of the United States. He was born in Rochester, N. Y., in 1854.

ROSS DUNN, M.D., Nashville, Tenn., aged 33 years, a graduate of the medical department of the University of Tennessee, in which institution he was afterward demonstrator of anatomy, died July 29.

JOHN H. GILBERT, M.D., Quincy, Mass., a graduate of Dartmouth and Tremont Medical College, aged 63 years, died at his home August 3.

Robert Hunter, M.D., Netherwood, N. J., died while on his vacation in Canada, July 29, aged 75 years....D. A. Linthicum, M.D., Helena, Ark., August 1, aged 80 years....W. W. Parker, M.D., Richmond, Va., August 3, aged 75 years....G. W. Ryan, M.D., Niantic, Ill., July 30, aged 51 years....Rudolph H. Schmidt, Seymour, Wis., July 29, aged 53 years.

Association News.

Practice of Ophthalmology.—The resolution in regard to the practice of ophthalmology, as originally introduced and printed in the JOURNAL (see vol. xxxii, pages 1337,1373), was revised as follows by the special committee, composed of Drs. Thomas H. Fenton and Louis J. Lautenbach, Philadelphia; and Dudley S. Reynolds, Louisville, endorsed by the ophthalmologic section and adopted by the ASSOCIATION at the third general session.

Resolved, That the application of lenses in such cases is treatment of errors of refraction in the eyes requires a knowledge of pathology and therapeutics.

Resolved, That the applica tion of lenses in such cases is a part of the practice of medicine to be undertaken by no one not qualified to practice medicine and surgery.

New Instrument.

New Form of Portable Battery.

W. N. SHERMAN, PH.D., M.D.
MERCED, CAL.

The faradic current, being the one most frequently used in general practice, has stimulated the manufacturer of batteries to offer them in as small and compact form as possible, consistent with efficiency. In presenting this new form of portable battery the desire has been to combine efficiency, compactness and novelty.

A faradic battery in the form of a cane would at first thought appear an impossibile combination, but when we consider the principle and the construction of faradic batteries in general, it will be seen that the principle of scientific construction has not been altered, but simply a change made in

mechanical construction. We may carry this around with us, concealed in such a way that it can not attract attention, and in a form that is rather a personal ornament than an unsightly burden. Its form does not prevent the scientific electric construction as in other forms, nor affect its efficiency, when compared to other small faradic batteries, while for portability, novelty and convenience it far surpasses any form yet constructed or offered to the profession or the public.

The cuts here presented will give the reader a very good idea of the form of construction, both mechanical and electric. The first illustration, Fig. A, shows the cane one-half its actual size, with the form and outline complete, except its length. The head is not made in the chased design illustrated, but in plain roman gold or polished gold finish, more attractive and durable than the chased heads. The edges of the two end caps

Fig A

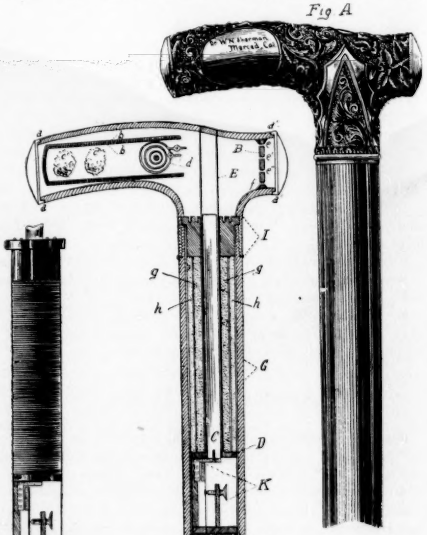

Fig 2

Fig 1

are milled to facilitate their easy removal, and are attached by a half turn, and lock tightly in place. The head is four inches long and one in diameter. It has a lock joint between the head and stick that is a convenient and quick method of removing the coil for adjustment of the vibrator, should it become necessary.

Fig. 1 shows a longitudinal section of the battery and electric parts, and nicely illustrates its internal arrangement. The cylindric gold head is in the form of a polo handle or cane head, and affords a container for *b b*, the nickle-plated hand electrodes, sponges *c c*, and cords *d*. At the opposite end is the hard rubber disc switch-board *B*, adjusted to a slotted ring, so that it is easily removed by pushing it inward. It has three sockets—*e, ee, eee*—for the fastening of the cord tips, and a smal lever switch at *f*. The connections between this switch-board and the hard rubber head of the induction coil are made by cable wire, well insulated and so arranged as to give the three currents usually given by hand batteries.

A sliding rheotome *E* is provided, which pulls out at the top of the handle and nicely graduates the current. The coil sets down into the wooden well and rests on its top edge by a shoulder, as seen at the joint *l*. The primary coil *g*, the secondary coil *h*, and the core *c*, of soft iron wire, are combined and adjusted to give the greatest strength of current with the least waste of energy from the cells. The vibrator arm and the ad-

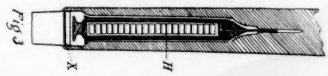

Fig 3

justing screw *k* are of delicate construction and perfect mechanism. The connection of the cells is made by contact of the positive or carbon pole at *l*, and the negative or zinc pole at *n*. A thin copper ribbon leads from the zinc of the lower cell to a contact connection made at *n*. The coil and cells are easily removed and new cells can be replaced in a moment.

Fig. 2 shows coil and cells, removed from cane. The length of coil and cells is about 9½ inches. One of these cells alone has run the coil *continuously* for *seven* hours, and after a rest of twelve hours showed a current of .026 amperes. The normal capacity of the cells is 1.5 volts, .5 amperes, internal resistance 26 ohms, which is a marvelous showing for so small a cell (see cut, full size). These cells are renewed at a cost of 30 cents each, and should operate the coil for at last fifty séances of ten minutes each.

The cane is a highly-polished, well-finished stick, one inch in diameter at the top, gradually tapering to five-eighths of an inch at the bottom. The wood is furnished in ebony or imitation ebony, which is a hard, heavy wood, weighing five ounces more than the lighter wood. From the outside they can not be distinguished, and the writer prefers the lighter stick.

At the point is provided a screw cap ferrule (*X*), under which is carried a hypodermic syringe (Robinson-Dettmers), which is all-metal and aseptic, with but three parts, barrel, piston and needle (Fig. 3). The piston is hollow, to admit the carrying of tablets (*H*). The complete cane weighs eighteen ounces.

Miscellany.

United Twins.—*O Brazil Medico* of July 1, reproduces photographs of a pair of twins, bright, fairly well-developed girls of 6 years, who are connected together from the umbilicus to the level of the axilla. The parents have applied to Dr. Ramos to separate them, and he is now studying the case to determine the feasibility of an operation.

Frictions with Hot Salt Before the Douche.—Cooking salt is mixed with hot water to a semifluid mass with which the limbs and trunk are rubbed for a few seconds before applying the douche, as a hydrotherapeutic measure in cases where a defective reaction is anticipated.—*Semaine Méd.*, July 5.

Electric Treatment of Gout.—Further experience is confirming the efficacy of Guilloz' method of treating gout by

autoconduction of a long-continued high-frequency current combined with the electrolytic administration of lithium directly to the affected joints. Acute attacks are aborted, and chronic gout attenuated.—*Progres Med.*, No. 20.

Types and Tuberculosis.—Professor Landouzy formally states that the most marked predisposition to tuberculosis infection occurs in persons with white, delicate, transparent skin, marbled with veins, freckles usually, the hair on the head or body, or both, auburn or red, iris blue, flesh soft, sweat easily induced, graceful outlines. This type is called Venetian in Europe, but not from any special prevalence of tuberculosis at Venice, which has rather a low death-rate from this disease, but probably on account of Titian's women. All or very nearly all of this type are tuberculous, in Paris at least, he asserts. Next in order come the scrofulolymphatic, persons who have been tracheotomized or have undergone other trauma, etc., and especially persons who have had smallpox. Delpeuch calls attention to a passage in Hippocrates' "Epidemics" describing tuberculosis and the persons affected as all having red hair and blue eyes, in his experience, the description almost identical with Landouzy's conclusions 2329 years later.

A Christian Science Druggist's Fate.—*The N. Y. Medical Journal* quotes the following from the *Pharmaceutical Era* for July 13: "The Christian science fantasy has claimed many dupes and victims. These have generally been those individuals who would be cranks anyhow upon some subject or other, so that it is only occasionally that the crimes of this sect have come to public notice through their effects upon the general public. It is therefore very startling to learn that one of a class of men who, it would seem, would be the very last to be duped by this fanatical faith, has succumbed to it, and lost his reason in consequence. Christian science does not believe in drugs; therefore a druggist who is also a Christian scientist must be regarded as a strange anomaly. It is a most incompatible mixture. Such a druggist can not practice what he preaches in both professions. If he is true to the science he can not sell drugs; if he can not sell drugs he must starve, and this is just the position of an unfortunate druggist in an Illinois town. He has gone crazy over Christian science. He lost his business because he advised his customers to leave drugs alone; and not only this, but his sister and niece have also become demented upon the same subject, and the former has died in an insane asylum."

Legal Status of Physicians in Indiana.—The State Board of Medical Registration of Indiana, through its secretary, Dr. Curryer, recently asked Attorney-General Taylor for an opinion in regard to the standing of the faith curers, Christian scientists, Dowieites, osteopaths, etc. The attorney-general gave the opinion on August 4. He first reviewed the standing of these various sects in the different states, giving the various decisions, and concluded with the following opinion: "In view of these authorities, and especially of the decision of the supreme court of Indiana, in the Benham case, it is my opinion that it is a violation of the law for an unlicensed person assuming the title of a doctor to prescribe or pursue any practices for the cure or relief of diseases, injury, or deformity, especially where any fee is charged for such services. It is perfectly obvious that the non-treatment of disease requiring treatment by an unqualified person may be as injurious as the administering of erroneous treatment or remedies, and it is my opinion that in enacting the statute of 1887 the General Assembly contemplated the protection of the public from the evil of non-treatment or non-action where necessary as fully as it did from wrong treatment. In so far then, as Christian scientists, faith curists, mental healers, and metaphysical medicators advertise themselves as physicians, and accept fees for treating disease, by silent or other forms of prayers, or by moral advice, or by profound thought, or by absolute non-action, they unquestionably, in my opinion, violate the law. On the other hand, osteopaths and magnetic healers who hold themselves out as physicians, and advertise an ability to cure diseases, or who accept fees for the treatment of diseases, by prescribing for them either medicines or the simple laying on of hands, are, if unlicensed, violating the law. On the other hand, if they abstain from claiming to be doctors and from advising treatment, but simply administer massage under another name, there is nothing in the law which forbids them giving to their treatment what name they please, and there is nothing in the law which requires masseurs to be licensed, and one who administers massage, whether recommended by a physician or voluntarily sought by an afflicted person, is at liberty to charge for his services whatever he deems them to be worth."

Cerebrospinal Fever.—We have learned from the public health reports published by the United States Marine-Hospital Service, that during the past year this disease has existed in twenty-seven states and in the District of Columbia. During this period, too, examination of the mortality returns of our large cities has shown a marked increase in the number of cases styled meningitis. While many of these cases are, as formerly, instances of tubercular meningitis, results of ear disease, complications of typhoid and pneumonia masking the original trouble, yet some of them must be looked on as cases of genuine cerebrospinal fever, in that in many of the laboratories of these cities the specific germ as insisted on by Weichselbaum, the diplococcus intracellularis meningitidis, has been isolated. The work of Weichselbaum has been confirmed in this country by Councilman, and Mallory and Wright, the latter observers giving in their late book on "Pathological Technique," a most masterly account which would readily separate this from any other micro-organism. Suffice it to say here that, as the name of the disease indicates, the organisms occur in pairs, are present within the pus cells and even in the nucleus. They are decolorized by Gram's method.

Lately, before the Cincinnati Academy of Medicine, Greiwe demonstrated a tetracoccus which was isolated from the fluid of the spinal canal, obtained both before and after death. Examination of the fluid itself showed both tetrads and diplococci, and both were present within the cells. But one growth was obtained on culture-media, and examinations of these cultures showed mainly a tetracoccus, but a few diplococci were present. It is extremely probable that they were merely different forms of the same organisms, possibly the preparation of the slide being sufficient to convert here and there a tetracoccus into two pair of diplococci. Certainly these germs bore the closest relation morphologically to one another, and their behavior on culture-media greatly resembled that of the diplococcus intracellularis meningitidis. It seems improbable, considering the comparative infrequency of this form of meningitis of late years, to within the last few months, that the Cincinnati cases which presented the same complex symptomatology that has has existed in patients scattered all over the Union, should be due to a distinct micro-organism, while the other cases show the specific diplococcus that has pretty definitely been settled on as the cause of the disease. More probable it is that the diplococcus may sometimes exist as a tetracoccus.

The close relation existing between pneumonia and meningitis has long been a subject of great interest on account of the frequency with which one occurs as a complication of the other. The chief point of difference is that pneumonia is spread widely all over the world; then, too, pneumonia as a rule runs a typical course ending by crisis. Still there are many who still maintain that the meningococcus is merely a variety of degenerative form of the pneumococcus.

The observations of Osler, as cited in his late Cavendish lecture (see JOURNAL, July 8, p. 98), are mainly confirmatory of the work of Weichselbaum, and give at the same time a care-

ful review of the subject. Osler's experience covered 21 cases, in 16 of which lumbar puncture was made. In 13 of these the diplococcus intracellularis meningitidis was isolated, in 2 the cultures remained sterile, and in 1 staphylococci appeared in culture while the fresh cover-glass specimens are described as doubtful. All authors agree on what might be called the "fulness" of the symptoms; symptoms, cerebral, spinal, peripheral, and of course general, are all usually well pronounced in the same case, more so, indeed, than in any other variety of meningitis. Another point in which this variety is distinctive is the extremely abrupt onset, as abrupt as the onset of asthenic pneumonia. The fever shows no constant features, except perhaps irregularity; occasionally, however, it may be continuous, resembling that of typhoid; again it may be markedly intermittent, even accompanied by chills and rigors and give the impression of a malarial fever. The blood shows nothing very distinctive; leucocytosis is an almost invariable accompaniment, the count being as a rule over 15,000. The skin eruptions of the disease were, in Osler's cases, well marked; 13 out of the whole series showed a rash of some sort, herpes taking the lead with 8 cases, bearing out the statement of some authorities that herpes occurs more frequently in this than in any other acute affection. The other rashes included diffuse erythema, petechiæ, and a peculiar purpuric herpes over a livid erythema. Two of the most important points discovered in late years in regard to meningitis are the presence of the so-called Kernig sign, and the release of a considerable amount of fluid by lumbar puncture, the so-called Quincke puncture. The former test is elicited in the following manner: the patient is placed in a sitting position, and an attempt made to straighten the leg, which is in a position of flexion; inability to do this on account of contraction of the flexors constitutes the sign. When the patient is unable to assume the sitting position the test is made by flexing the thigh on the abdomen, when rigid resistance is met on attempting extension. This was present in all of Osler's cases, and in those the writer has recently seen as well. Netter's explanation of this phenomenon is that flexion elongates the spinal nerve roots and so increases their irritability; already greatly irritated by the inflammatory process, this increase of irritation is sufficient to cause reflex contraction of the flexors, particularly when the sitting position is assumed, as this latter augments the nerve stretching. The lumbar puncture is even more interesting, and is also of greater value. According to Osler, "during the past ten years no single measure of greater value in diagnosis has been introduced than Quincke's lumbar puncture." It is usually made between the third and fourth lumbar vertebræ. By its aid we are not only able to make a diagnosis that meningitis is present but by examination of the exudate and inoculation of culture-media we are very frequently enabled to tell the specific cause. The amount of fluid varies from a few drops to several ounces and may be serous, serofibrinous, purulent or hemorrhagic. As to the therapeutic value of the Quincke puncture there is some variance of opinion. In the cases the writer has seen, the improvement has been prompt and marked, but unfortunately temporary. Usually the improvement has been in a lessening of the delirium, a better character to the pulse, and a lowering of the temperature. In one of Osler's cases numerous punctures were made at intervals entirely on account of supposed benefit. The clinical notes invariably described the patient as improved after a "wet tap." In all, seventeen punctures were made during a period of a little over a month, and undoubtedly this measure served to prolong the patient's life. It is to be hoped that this measure will be even more extensively used in the future; a single tap for diagnostic purposes; frequent puncture for the relief of the symptoms. Clearly, many of the symptoms from which the patient is suffering are from pressure, and equally clear is the indication for relief from this pressure. This can only be well done by tapping, just as when fluid in the pleura or pericardium can only be effectively done by the same means. The operation is not difficult nor is it likely to be attended with as much danger as the tapping of the pericardium.

The New Illinois Medical Practice Act.—We print below the questions submitted at the first examination held under the new law to the applicants for license to practice in Illinois. The first series of questions are those used in examining physicians; the second, those for "other practitioners." "Other practitioners" refer to those which Section 2 of the law calls "those who desire to practice any other system or science of treating human ailments, who do not use medicines internally or externally, and who do not practice operative surgery." Under this the osteopaths come in, and these—fourteen of them—were the only ones who applied for special license and took the examination. "Osteopathy" is, however, not recognized by the law, any more than any other sect which treats without medicine. Those who pass the examination will be licensed to treat human ailments without the use of medicines, and without the use of surgical procedures. The questions submitted for the specially favored class are certainly elementary enough. The very important subject of physical diagnosis was not taken up, but we understand it will be in the future examinations.

SERIES I—FOR PHYSICIANS.

ANATOMY.

1. Trace the femoral artery from its origin through its large branches to the ankle. Describe the anatomical relations in the upper third.
2. How many tarsal bones are there? Name the largest and one of the smallest.
3. Name the muscles affected in torticollis, also state the origin and insertion of the principal muscle affected.
4. Name the largest arteries divided in amputation below the knee-joint.
5. Describe the diaphragm, its attachments, number and name of openings in it.
6. What are the number and names of the lobes of the liver?
7. What are the branches of the axillary artery?
8. Name the nerves forming the sacral plexus and its branches.
9. What is the sympathetic nerve system, and what parts of the body does it reach? Name and locate its chief nervous centers.
10. Give boundaries and contents of the popliteal space.

PHYSIOLOGY.

1. Give the physical properties and histologic characteristics of blood, and describe the process of coagulation.
2. What are proteids? What elements do they contain?
3. Describe the mechanism of the heart's action, and the sounds of the heart and their cause, also describe the manner in which the blood circulates through the heart.
4. State the differences between the adult and the fetal circulation.
5. Describe the liver, naming its functions, also state the use of glycogen in the body.
6. Describe the manner in which the nervous system affects blood-pressure.
7. Describe the mechanism of respiration.
8. State of what the spinal cord consists, and name the functions of the membranes of the brain and of the spinal cord.
9. Describe the three forms of digestion.
10. What is the source and what is the function of the saliva?

CHEMISTRY.

1. Define an element and a compound. Give examples of each and their symbol.
2. What is hydrochloric acid. Give synonym and chemical formula.
3. Name the different forms in which matter exists, and define each. Examples.
4. What is meant by qualitative analysis? Quantative analysis? Structural analysis?
5. Give formula for normal acid, basic and a double salt.
6. What is oxygen, and how is it prepared from $KClO_3$?
7. What is the process termed when oxygen unites with another element, and amidst what phenomena does it usually take place?
8. What is an aldehyde, chemically speaking? From what and how is formaldehyde most readily prepared?
9. What is peroxid of hydrogen? Give properties and formula.
10. What is starch? How is it obtained? Mention a test by which starch can be recognized.

MATERIA MEDICA AND THERAPEUTICS.

1. Describe the therapeutic value of ichthyol, and name its principal ingredients.
2. Give the action and uses of menthol.
3. Give doses, therapeutics and dangers of three coal-tar products most used as antipyretics.
4. Give the composition of Hoffman's anodyne, and Monsel's solution.
5. Name a few local and systemic emetics.
6. Compare atropin with morphin in physiologic effects.
7. Name the active principle of colchicum, and describe the therapeutic action.
8. Ergot, its physiologic and therapeutic action.
9. What would you do in a case of arsenic poisoning?
10. Write what you know of the urine as to: 1, its normal and abnormal pathologic constituents, and the manner of detecting the principal abnormal matters; 2, its specific gravity, stating upon what this depends, and the important information obtained through a knowledge of the specific gravity. Also state what the following conditions indicate: *a*, a high specific gravity, and a small amount of urine; *b*, a high specific gravity and a large volume of urine; *c*, a low specific gravity and a small amount of urine; *d*, a low specific gravity and a large amount of urine.

PATHOLOGY AND BACTERIOLOGY.

1. Describe calcareous degeneration, and give causes.
2. Describe the histologic structure of sarcomata.
3. What are the morbid changes that take place in the vessels in arteriosclerosis?
4. What are blood-changes in leucemia?
5. Differentiate between fatty degeneration and fatty infiltration.
6. Make a brief statement of the bacteriology of diphtheria, describing the micro-organism and the local and general tissue-changes produced by it.
7. Describe the bacillus of typhoid, giving its action and stating where found.
8. Describe the tubercle bacillus. How would you determine its existence in sputum?
9. Name the principal cocci which occur in suppurative process.
10. In what way do bacteria affect the animal organism? Is the nitrogen in the body affected by bacteria, and if so, in what manner?

SURGERY.

1. Describe spina bifida and spina ventosa.
2. Which do you consider more important in bone repair, the periosteum or the medulla?
3. Of what importance is the medulla in the formation of red blood-corpuscles?
4. Describe and differentiate between the hard and soft chancre.
5. Give the chief varieties of spinal curvature—non-tubercular. Name causes and give treatment.
6. Symptoms, diagnosis and treatment of Colles' fracture.
7. If a pistol-ball penetrated the skin and did not fracture the skull where would you search for the ball?
8. Give the treatment for penetrating wounds of the abdomen.
9. Give signs, symptoms and common varieties of dislocation of the shoulder-joint, and method of reduction of anterior dislocation.
10. Which wounds do you consider the more dangerous, those of the brain or those of the intestines? Why?

PRACTICE.

1. Describe the morbid anatomy and treatment of acute enterocolitis.
2. Give the causes, symptoms and treatment of cholelithiasis.
3. Name the various forms of stomatitis, and outline the general treatment.
4. Give the prompt and immediate treatment in a case of acute asthmatic attack of dyspnea.
5. Vesicular emphysema, its causes, symptoms and treatment.
6. Give the different diagnosis between cerebral hemorrhage, embolism, thrombosis and uremia.
7. Describe the pathology and treatment of thermic fever.
8. Give the common names, incubation period, period of eruption and duration of: *a*, rubella; *b*, rotheln; *c*, variola; *d*, varicella; *e*, pertussis.
9. Diagnosis and treatment of typhoid fever.
10. Write what you know of catalepsy.

OBSTETRICS.

1. Describe the uterus, its normal position, its relationship to the other organs, and the means by which it is held in place.
2. How would you diagnose pregnancy before the fourth month? After the fifth month?
3. What means would you take to arrest a threatened abortion, and if abortion occurred, how would you know it was complete?
4. What is the most serious displacement of the uterus in pregnancy? How should it be treated?
5. What are the causes of, and how would you treat antepartum hemorrhage?
6. Describe normal labor, giving the clinical characteristics and mechanism of each stage.
7. What would you do in a case of rupture of the uterus in the first stage of labor? What in the second stage?
8. What would you do if the head should be arrested in the inferior strait in pelvic presentation?
9. How would you manage a case of shoulder presentation after labor has begun?
10. Etiology, prognosis and treatment of puerperal fever.

GYNECOLOGY.

1. Give the blood-supply of the ovaries.
2. Give the causes of suppression of the menses, and describe menorrhagia and metrorrhagia.
3. Give the contraindications for the use of the sound.
4. Give the treatment of endometritis.
5. Give the symptoms and treatment of pelvic peritonitis.
6. Differentiate hematocele from other pelvic lesions.
7. What are the causes and terminations of salpingitis?
8. Discuss the pathologic results of laceration of the perineum.
9. Give the differential diagnosis of: *a*, salpingitis from appendicitis; *b*, fibroid of uterus from pregnancy.
10. What are the causes of prolapsus uteri?

HYGIENE.

1. What is an antiseptic? A deodorant? A disinfectant? A germicide?
2. Name the three chemical germicides most commonly used, and state in what proportions employed.
3. Name: *a*, the disinfectant a solution of which should never be made in a tin vessel; *b*, the disinfectant which precipitates when brought in contact with albumin.
4. If called to a case of diphtheria in a family where there are other children, by what hygienic means would you hope to prevent the latter from contracting the disease? What precautions would you take to prevent your carrying the disease elsewhere?
5. What aërial disinfectant would you use for disinfecting an apartment after the occurrence of a communicable disease? Describe the manner in which it should be used.
6. Describe in full the manner in which you would disinfect a room in which a patient has been sick with scarlet fever.
7. What is the incubation period of: *a*, variola; *b*, varicella; *c*, rubella; *d*, scarlatina; *e*, scarlet fever?
8. What effect has ground air and ground water on health?
9. What diseases are due to impure water?
10. Give the minimum of cubic space to be allotted to each individual in: *a*, tenement houses; *b*, school-rooms; *c*, ordinary hospital wards; *d*, in a fever, surgical or obstetric ward.

MEDICAL JURISPRUDENCE.

1. What is the difference between the spasms of arsenic and strychnia poisoning?
2. When does complete ossification of the os innominatum take place?
3. When a male and female are found dead from asphyxia, which was more probably the survivor? Why?
4. In the case of both dying from the same accident, which would be the probable survivor?
5. In poisoning with prussic acid what symptoms would you expect to find?
6. What relation to insanity has remorse?
7. Define insanity.
8. What is the difference between paranoia and pseudomania?
9. What is the age of consent in Illinois?
10. Define a degenerate.

SERIES II—OTHER PRACTITIONERS.

ANATOMY.

1. Name the vertebræ forming the spinal column.
2. What is the scapula? Over what rib does it lie?
3. Name the ligaments of the hip-joint.
4. Describe the trapezius and the deltoid muscles, and give their action.
5. Where does the aorta commence, and into what does it divide and where?
6. Describe and locate the liver.
7. Between what ribs does the apex of the heart pulsate normally?

8. Describe the lungs, and state which lung is the shorter, and why? Also name the structures forming the root of the lung by which the lung is connected with the heart and trachea.

9. What is the sympathetic-nerve system, and what parts of the body does it reach?

10. Trace the internal saphenous vein from its commencement to its termination.

PHYSIOLOGY.

1. What is hemoglobin? Where does it occur in the body?
2. What are leucocytes? Where are they found in the body?
3. The difference in the substances contained in arterial and in venous blood?
4. The cause of the first sound of the heart? Of the second?
5. The number of normal respirations in the adult per minute.
6. The composition of the gastric juice.
7. Describe the systemic circulation of the blood. The pulmonary circulation.
8. Describe the mechanism of respiration, and state on what the movement of the lungs depends.
9. What is the function of the cerebellum?
10. Describe the tissue and nerve-fibers entering into the structure and arrangement of muscles, and discuss the stimuli affecting muscular substances.

PHYSIOLOGIC CHEMISTRY.

1. What are proteids? What elements do they contain?
2. State the occurrence of glycogen in the body and its chief source.
3. From what is the fat deposited in the body derived?
4. What is bile? From what is it derived? Name some of its characteristics, constituents, and two important pigments.
5. From what is the hydrochloric acid in the stomach derived?
6. What is the part oxygen takes in the physiologic process?
7. What is carbon dioxid? How is it formed in the body, and how got rid of?
8. Of what is the atmosphere especially composed? State proportions.
9. Describe the tissue changes in the spinal cord in locomotor ataxia (tabes dorsalis, posterior sclerosis).
10. Write what you know of the urine as to: 1, its normal and abnormal or pathologic constituents, and the manner of detecting the principal abnormal matters; 2, its specific gravity, stating upon what this depends, and the important information obtained through a knowledge of the specific gravity. Also state what the following conditions indicate: *a*, a high s. g. and a small amount of u.; *b*, a high s. g. and a large volume of u.; *c*, a low s. g. and a small amount of u.; *d*, a low s. g. and a large amount of u.?

HYGIENE.

1. What is meant by ventilation?
2. What precautions would you take relative to the matter coughed or spit up by consumptives? What danger, if any, will result if these discharges are deposited on the floor?
3. In hospital wards for ordinary cases, what cubic air-space should be allowed to each bed?
4. Why is milk so nearly perfect food? Why are eggs so highly valued for food?
5. What effect has the contraction of a muscle on the flow of the blood through it?
6. What is the incubation period of typhoid fever? Of measles?
7. What is meant by disinfection? How would you disinfect a room after the death or recovery of a patient suffering from diphtheria?
8. How is corrosive sublimate, bichlorid of mercury or carbolic acid used as a disinfectant, and in what proportions?
9. Give the size of a model school-room accommodating forty pupils. On what side of the pupil should the light be admitted, and why?
10. After attending a case of scarlet fever, for instance, what precautions would you take to prevent carrying the disease to your family, friends or patients?

HISTOLOGY AND PATHOLOGY.

1. What is epithelium? Where is ciliated epithelium found in man?
2. Describe hyaline cartilage, and state in what situations it principally occurs.
3. In what manner is true bone essentially formed, or of what is it always made up?
4. Describe the histologic structure of an artery. Of a vein.
5. What are medullated nerve fibers? What important nerves are composed of these fibers?
6. Describe the manner in which fractured bone unites.
7. Give the definition of necrosis and definition of gangrene.
8. What histologic elements are directly concerned in inflammatory processes?
9. What are the structural changes in the blood-vessels in arterial sclerosis?
10. Enumerate the different stages of acute lobar pneumonia, and describe the gross appearance of the lungs in some one of these stages.

San Francisco Notes.

POLITICS AND HEALTH.—The conflict between the Board of Health and the Supervisors, backed by the auditor, has assumed a phase that promises much harm to the city of San Francisco. The auditor refused to audit the Board of Health's warrants for employes not definitely specified by the statute, and consequently many of the Board's employes, a number of them useless political burdens, were forced out of their jobs. The Board has retaliated by closing all the receiving hospitals of the city, under the excuse that they can not operate them on the money allowance granted by the Board of Supervisors. To-day there is not a hospital open, save the City and County Hospital and the pest-house. A daily paper has taken the matter up, and opened the water-front receiving hospital, which it proposes to operate on its own account and for advertising purposes, until the present muddle is cleared up. Already the evil effects of certain changes and reductions on the Board of Health staff are being felt. An unscrupulous cattle-dealer has gone about through the nearby counties and bought up, very cheap, a lot of tuberculous cattle, which he shipped to the city of San Francisco in the most open and barefaced manner. Fortunately, a meat inspector happened to see the lot, and got the former veterinary of the Board of Health to volunteer his services as inspector of this bunch of cattle; they were condemned and sent into quarantine to be subsequently killed and burned. But, if within the short space of a few days this much has been attempted, one can but imagine what may follow. The root of the whole trouble lies in the fact that in the fall there will be held an election under a new charter, and the political bosses are all striving to secure as much patronage as they can in order to influence things at that election. If they can appoint a hundred or two of their political friends to jobs in the Board of Health office, then this hundred or two can do a good deal of electioneering, and help on the party through which they secured their appointments. The truth of the whole matter is fully understood by every one, yet the maneuvering for political advantage goes on all the time. Under the new charter these city offices will be appointed by the mayor, who will control almost all the patronage, and consequently the strife is a particularly bitter one.

A DISGRACE ENDED.—An order of the Board of Supervisors has recently brought to a sudden end what promised to be a most unique business enterprise in the line of houses of prostitution. Some few months ago certain men in San Francisco conceived and brought forth a scheme which was very simple, yet truly unique. They obtained a large piece of property in a rather poor section of the city, not far from the section known as "Chinatown." On this they built a two-story building, or rather nest of buildings. From the street it looked like a simple two-story building without windows. There were two large doorways, opening upon an alley-way that led all around the four sides of the building. Within the outside enclosing wall, and opening from these alleys, were 250 "cribs" which rented for the sum of $15 per week, so that the income from them alone was something over $16,000 per month. Besides this, each occupant paid a certain doctor—she was not allowed to choose her own—the sum of $1.00 per week. The doctor's income from this source therefore came to a little over $1100 per month. The natural inference is that the doctor was directly interested, to no small extent, in the building. Whatever the truth of that may be, it is cer-

tain that the "cribs" were in great demand, for the reason that a number of alleys in the city, heretofore given up to that sort of tenantry entirely, have within a short time been closed by the police department, after a long and strenuous work on the part of nearby property-owners and certain churches. The scheme was but short-lived, for the property-owners in the vicinity brought the matter to the attention of the Board of Supervisors, with the result that it was closed. The latest development in the question is the statement that the aforesaid property-owners are to have the "Corporation," or the members thereof, arrested and prosecuted on the ground that they have violated a certain statute, which makes it a misdemeanor to rent property for purposes of prostitution. It is possible that in the course of the case the name of the doctor who was so much interested in the success of the business may come out. Your correspondent is aware of the doctor's name, but unless it transpires in some other connection, he is not at liberty to disclose it.

August 2, 1899.

London.

From Our Special Correspondent.

ROYAL COLLEGE OF SURGEONS.—The chief topic of interest in the English profession at present is the situation at the Royal College of Surgeons, between the Members and the Council, mentioned in previous issues of the JOURNAL. A moderate, powerful and widely-signed memorial has just been presented to the Council, which carries such weight, by reason both of the standing of its signatories and the wide-spread attention which it has attracted, that even that body can no longer evade or loftily shelve the issue. Their only reasons for hesitating to grant the representation asked for are that they themselves are — naturally—satisfied with the present state of affairs, as illustrated by their president's childishly feeble appeal to the Members, at the annual meeting, not to insist on their rights, because many of the Fellows were opposed to granting them, and the harmony of the Centenary would be disturbed! Their other, the sacredness of ancient custom—always a telling argument—has received its death-blow in the present memorial, in which the uncomfortable fact is shown that, from the foundation of the College in 1800, until 1843, the only alumni of the College were Members, who, of course, controlled its affairs, and it was only on the creation of the higher rank of Fellows in that year that all the power was turned over to the present "aristocracy." The injustice of the present position demonstrates itself in a simple statement of numbers. Some 1300 Fellows absolutely control the affairs of a College consisting of nearly 25,000 Members. The Council could give points to "Oom Paul." The moderateness of the appeal of the Members may be judged from the fact that they do not even ask for direct representation, but merely for the right to elect a certain number of Fellows, to represent them on the Council. They make no complaint of, or even reflections on, the competence or fairness of the Fellows' government, but when we remember that the great majority of this ruling class are either city consultants or specialists, we can easily see how little such a body is capable of legislating intelligently on questions involving the interests of the great body of general practitioners, even with the best intentions. And no more favorable or becoming opportunity for granting fair representation to all will ever come than the new charter which is to mark the coming Centenary.

FOOD ADULTERATION.—A curious form of "adulteration" of food was brought to light, created, in fact, in Parliament this week. A most extraordinary clause was introduced in the new Food and Drugs bill, making it *illegal* for oleomargarin to contain *more than 11 per cent.* of genuine butter. This strange provision was defended on the ground that if more than this proportion of butter is added to the oleo "brew" it interferes with the simpler tests of the official analysts and renders its distinction from butter quite difficult. In short, the public are not to be allowed more than a certain standard of goodness in their food, for fear of inconveniencing the Government analysts. The question at once suggests itself, if neither the taste of the consumer nor the tests of the chemist can detect any difference between margarin and butter, and they are both equally wholesome—as most experts are agreed—why legislate against the former, in the interests of public health? In point of fact, most of this legislation, in both England and America, is a political sop to conciliate the farmer vote—wherefore the Government summoned its irrational majority and drove the offensive clause through, in spite of the vigorous criticism of the House.

NURSES IN ENGLAND.—The largest school for nurses in England, indeed probably in the world, is that attached to the London Hospital, where no less than 400 probationers are at work under the leadership of Miss Eva Luckes, the gifted superintendent. The school receives an average of nearly 2000 applications per annum for nurses.

CANCER.—The Government has declined to appoint a commission to investigate the prevalence and causation of cancer, saying, not unreasonably, that in the present state of our knowledge of the causation of the disease, but little of practical value could be hoped from such a commission. And, indeed, if the commission is to be necessarily after the type of most of its predecessors, consisting of a majority of titled and political duffers and a minority of scientists, which aggregation, after three years' cogitation, announces as its findings the commonplaces of professional knowledge, not much is to be hoped from it; but a real research commission, whose chief object was to enable skilled investigators to devote their entire attention to the investigation of the problem for two or three years, might make some valuable changes in the "present state of our knowledge." The interest of the public has been so thoroughly aroused that the authorities will probably be obliged to take some step in this direction, even the Church Sanitary Congress, having recently passed a resolution severely censuring their refusal to appoint a commission.

MYSTERIOUS POISONING.—A curious case of mysterious poisoning at Greenwich has caused some excitement in London, on account of the number involved. A party of some 200 children who were out on a school treat, sat down to a simple picnic lunch of cherries, small cakes and milk. Within twenty minutes of the end of the meal complaints of "bellyache" began, and before three-quarters of an hour had passed no less than eighty or ninety were rolling on the grass in severe pain. Fortunately medical assistance was promptly secured, the vans which had brought the children to the park were utilized as ambulances, and the worst cases taken to the great Dreadnought Hospital, which was providentially near. Here most of them recovered sufficiently promptly to be taken home by their parents that night, only two having to remain in the Hospital, and they were reported out of danger next morning. The cause of the trouble is still a complete mystery.

MARY ANSELL.—Now that Mary Ansell is executed and the excitement subsiding the truth about the wretched girl is beginning to leak out. The papers assured us that everyone who had had anything to do with the family regarded her as of unsound mind, or as a "degenerate." Now comes her school teacher, in a quiet little letter, and states that since her name has been mentioned in that category, although she kept silence as long as the unfortunate girl had any chance of reprieve, she now feels that she ought to say that she knows of nothing which would justify her in regarding her as defective in any way. She was in her school six years, during which time she passed through every grade prescribed in the course and never failed in a single examination, in fact, passed most of them with credit. Her scholarship was slightly above the average of girls at her age. The teacher thinks that many people have confused her with her victim, who was only a few years younger and unquestionably defective.

SPOILED FRUIT.—A startling illustration of the protection to the public health afforded by sanitary inspectors and medical officers of health has just been afforded in the seizure, in the great Lipton's canning factory in South London, of no less than 250 tubs of spoiled fruit about to be made into jam. Think of the number of cases of "sparodic" gastro-enteritis, etc., which this two and a half hundred tons of decaying fruit changed into "jam" would have caused in the community; and then say, if you can, that "preventive medicine" is a fad.

Queries and Minor Notes.

CALCULUS IN LUNG.

OMAHA, NEB., July 30, 1899.

To the Editor:—I have just had a very interesting case in which a man coughed up a calculus from the lungs. I can find absolutely nothing on the subject of lung or bronchial calculus in any of the text-books or periodicals available here. Can you give me any reference on the subject?

LER. C.

ANSWER:—Calculi of the bronchi appear to be rare, though they have quite a little "casuistic" literature of their own, going back as far as the sixteenth century. In the last series, Vol. iii, of the "Index Catalogue of the Library of the Surgeons-General, U. S. A.," there are eighteen separate articles enumerated, and a still larger list is given in the first series. The only separate monograph noticed is that of Paulalion: "Leo Pierres du Ponnon, etc., Paris, 1891." Modern text-books apparently have little to say on the subject. It is only barely mentioned in Thomas' "Pathology," for example, and is entirely omitted in some others. A report of our correspondent's case would be of interest. Most of the literature of the subject appears to be French, the only American case in the last volume of the "Index Catalogue" being Munson's, in 1788. The latest article in the English language then given is that of Ross, *Australian Med. Jour.*, 1892, xiv, p. 300.

CONTRACT PRACTICE.

ST. LOUIS, MO., August 3, 1899.

To the Editor:—I wish to consult you on a question of ethics. I am offered the practice of a large manufactory on a salary to look after the operatives and their families; this salary is obtained by taking out monthly a fixed amount of their operatives' wages. I am just starting out in my professional life and wish to be on the right side.

L. E. B.

ANSWER:—The question of ethics here involved would probably depend largely on details not given in our correspondent's letter. It is undoubtedly the legal right of a company to employ medical service for its employes, whether or not it is for the best interests of the physicians. If the pay is equivalent to the average that would be derived from a medical practice covering an equal population, and the physician therefore is not cheapening himself by accepting it, the case is different from that where the service demanded is such that the average remuneration is reduced. This contract business, on general principles is bad, demoralizing to the profession, and has worked most disadvantageously to the profession in Europe, as it will in this country if allowed to extend too much. The spirit as well as the letter is the guide to the "Code of Ethics," and where the letter is silent the spirit of the Code to do as one would be done by should be the ruling motive.

DETERMINATION OF SEX.

SEDALIA, MO., July 27, 1899.

To the Editor:—It would be a great favor to me if you would inform me where or how I could get the complete works of sex determination by Dr. Schenck, as I would like to make a further study of the subject.

G. A. C.

ANSWER:—Dr. Schenck's work, "The Determination of Sex," has been translated and is published by the Werner Company, Akron, Ohio, Chicago and New York. Price $1.50. It gives his theory and the substance of what he has written on the subject.

The Public Service.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., to and including August 2, 1899:

Thomas B. Anderson, appointed captain and asst.-surgeon Vols., July 5, 1899, and assigned to the 37th Vol. Infantry in the Philippines.

Isaac W. Brewer, appointed lieutenant and asst.-surgeon Vols., July 5, 1899, and assigned to the 36th Vol. Infantry in the Philippines.

Edwin F. Gardner, major and surgeon, U. S. Army, leave of absence extended.

John C. Greenewalt, appointed lieutenant and asst.-surgeon, Vols., July 5, 1899, and assigned to the 35th Vol. Infantry at Fort Sam Houston, Texas.

Frederick Hadra, appointed captain and asst.-surgeon, July 5, 1899, and assigned to the 33d Vol. Infantry, Fort Sam Houston, Texas.

Deane C. Howard, captain and asst.-surgeon, U. S. Army, from temporary duty at West Point, N. Y., to Fort Columbus, N. Y.

D. J. Johnson, acting asst.-surgeon, from Fort Terry, N. Y., to San Francisco, Cal., for duty in the Department of California.

P. S. Kellogg, acting asst.-surgeon, from Battle Creek, Mich., to San Francisco, Cal., for duty in the Department of California.

T. H. Landor, acting asst.-surgeon, from Canton, Ohio, to San Francisco, Cal., for duty in the Department of California.

Henry Lippincott, lieutenant-colonel and deputy surgeon-general, U. S. Army, member of an army retiring board convened in San Francisco, Cal.

George W. Mathews, appointed captain and asst.-surgeon Vols., July 5, 1899, and assigned to the 36th Vol. Infantry in the Philippines.

James Mitchell, acting asst.-surgeon, from Lancaster, Pa., to San Francisco, Cal., for duty in the Department of California.

Curtis E. Munn, major and surgeon, U. S. Army, member of a retiring board convened in San Francisco, Cal.

Seaton Norman, acting asst.-surgeon, to temporary duty at Fort Monroe, Va.

Ogden Rafferty, major and surgeon 27th Vol. Infantry, former orders revoked. He is relieved from further duty and station at Willet's Point, N. Y.

William Redin Kirk, acting asst.-surgeon, from Washington, D. C., to San Francisco, Cal., for duty in the Department of California.

Maxwell S. Simpson, acting asst.-surgeon, from Plainfield, N. J., to San Francisco, Cal., for duty in the Department of California.

George W. Sims, acting asst.-surgeon, from Corpus Christi, Texas, to San Francisco, Cal., for duty in the Department of California.

Dwight B. Taylor, acting asst.-surgeon, sick leave extended.

F. H. Titus, appointed major and surgeon Vols., July 5, 1899, and assigned to the 36th Vol. Infantry in the Philippines.

William Mc Van Patten, captain and asst.-surgeon 1st Washington Infantry, discharged for disability.

Walter R. Washburn, acting asst.-surgeon, from Denison, Texas, to San Francisco, Cal., for duty in the Department of California.

F. A. Winter, appointed major and surgeon Vols., July 5, 1899, and assigned to the 37th Vol. Infantry in the Philippines.

Movements of Navy Medical Officers.—Changes in the medical corps of the U. S. Navy for the week ending August 5, 1899:

Asst.-Surgeon C. A. Crawford, detached from the *Wabash* and ordered to the *Massachusetts*.

Asst.-Surgeon E. J. Grow, detached from the *Massachusetts* and ordered to the *New Orleans* immediately.

Asst.-Surgeon M. S. Elliott, detached from the marine examining board, August 2 and ordered to temporary duty at the marine recruiting rendezvous, New York, during leave of P. A. Surgeon E. S. Bogert; upon completion of this duty, directed to await orders.

Surgeon C. G. Herndon, ordered to the museum of hygiene for temporary duty.

P. A. Surgeon J. C. Rosenbleuth, detached from the *Vermont* and ordered to the *Nashville*.

Asst.-Surgeon F. L. Pleadwell, detached from the *Nashville* and ordered to the bureau of medicine and surgery.

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended August 5, 1899:

SMALLPOX—UNITED STATES.

Florida: Jacksonville, July 23 to 30, 4 cases.
Kentucky: Louisville, July 20 to 27, 1 case.
Louisiana: New Orleans, July 15 to 22, 1 case.
Ohio: Cleveland, July 22 to 29, 7 cases; Dayton, July 22 to 29, 3 cases.
Pennsylvania: Philadelphia, July 22 to 29, 1 case, 1 death; Pittsburg, July 22 to 29, 1 case.
Virginia: Portsmouth, July 22 to 29, 4 cases.
Washington: Seattle, July 15 to 22, 1 case; Tacoma, July 15 to 29, 2 cases.

SMALLPOX—FOREIGN.

Brazil: Bahia, July 1 to 15, 1 case.
China: Hongkong, June 7 to 24, 3 cases.
Greece: Athens, July 7 to 15, 16 cases, 5 deaths.
India: Bombay, June 27 to July 4, 8 deaths; Madras, June 24 to 30, 1 death.
Mexico: Chihuahua, July 15 to 29, 3 deaths.
Russia: Moscow, July 1 to 8, 5 cases, 3 deaths; Odessa, July 1 to 8, 6 cases; St. Petersburg, July 1 to 8, 7 cases, 2 deaths.
Turkey: Beirut, June 27 to July 1, 1 case; Smyrna, June 28 to July 16, 5 deaths.

YELLOW FEVER—UNITED STATES.

Virginia; Soldiers' Home, Hampton, July 21 to August 1, 40 cases, 8 deaths.

YELLOW FEVER—FOREIGN.

Brazil: Bahia, July 1 to 15, 28 cases, 14 deaths.
Colombia: Panama, July 16 to 23, 14 cases, 8 deaths.
Cuba: Manzanillo. July 1 to 8, 1 death; Matanzas, July 27, 1 case; Santiago, July 1 to 8, 7 deaths.
Mexico: Progreso, July 26, 2 cases; Vera Cruz, July 20 to 27, 20 deaths.

CHOLERA.

India: Calcutta, June 17 to 24, 3 deaths.

PLAGUE.

China: Hongkong, June 10 to 24, 257 cases, 255 deaths.
India: Bombay, June 28 to July 4, 45 deaths; Calcutta, June 17 to 24, 7 deaths.
Japan: Tamsui, May 24 to 31, 90 cases, 66 deaths.

CHANGE OF ADDRESS.

Braselton, B. E., from Weatherford to Vineyard, Texas.
Cass, W. E., from Dayton, Ohio, to 1604 Locust St., St. Louis, Mo.
Cannon, Jas., from 520 Walnut to P. O. Box 524, DesMoines, Iowa.
Dubell, A. K., from Burlington to Columbus, N. J.
Desrosier, G. W., from Danville to 1645 14th Ave, So., San Francisco, Cal.
Gill, H. Z., from Topeka to Pittsburg, Kan.
Houston, I. M., from Nebraska City to Falls City, Neb.
Johnson, H. P., from Long Prairie, Minn. to Fairmont, Minn.
Kimball, A. L., from Ann Arbor, to 744 Col. Ave, Racine, Wis.
King, P. H., from Nivian to Kyle, W. Va.
Klokke, W. E., from 572 Blue Island Ave. to 235 S. Lincoln St., Chicago.
Looze, J. J., from Seymour to Grand Rapids, Wis.
McLaren, J. L., from Los Angeles, Cal. to Saginaw, Mich.
Payment, R. C., from Wilcox to 1011 River Ave, Detroit, Mich.
Powell, W. L., from Cleveland, Ohio, to Univ. of Virginia, Charlottesville, Va.
Quinn, W. E., from Lyndon, Kan. to Las Cruces, N. M.
Simonton, A. C., from Seattle to Roslyn, Wash.
Shaw, W. E., from 489 to 2974 Colerain Ave, Cincinnati, Ohio.
Townsend, W. R., from 28 W. 59th to 23 W. 53d St., New York City.
Tenney, J. T., from Wabasha to Kellogg, Minn.
Wainwright, J. W., from 14 Platt to 177 W. 83d St., New York City.
Watson, S. H., from Vinton to Blairstown, Iowa.
Westervelt, J. Douglas, 215 Main St. to Suite 205 No. Texas Bank Building, Dallas, Texas.